



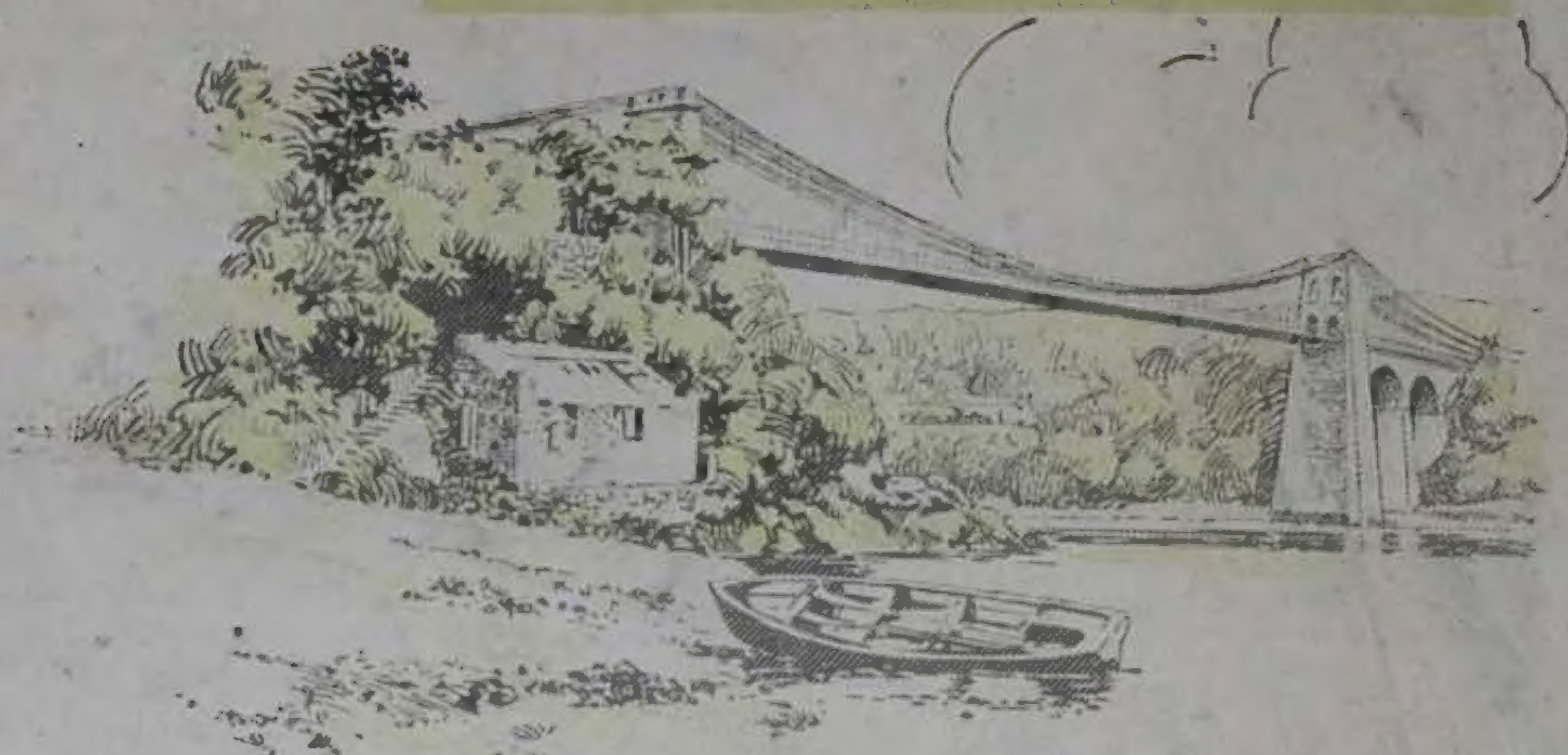
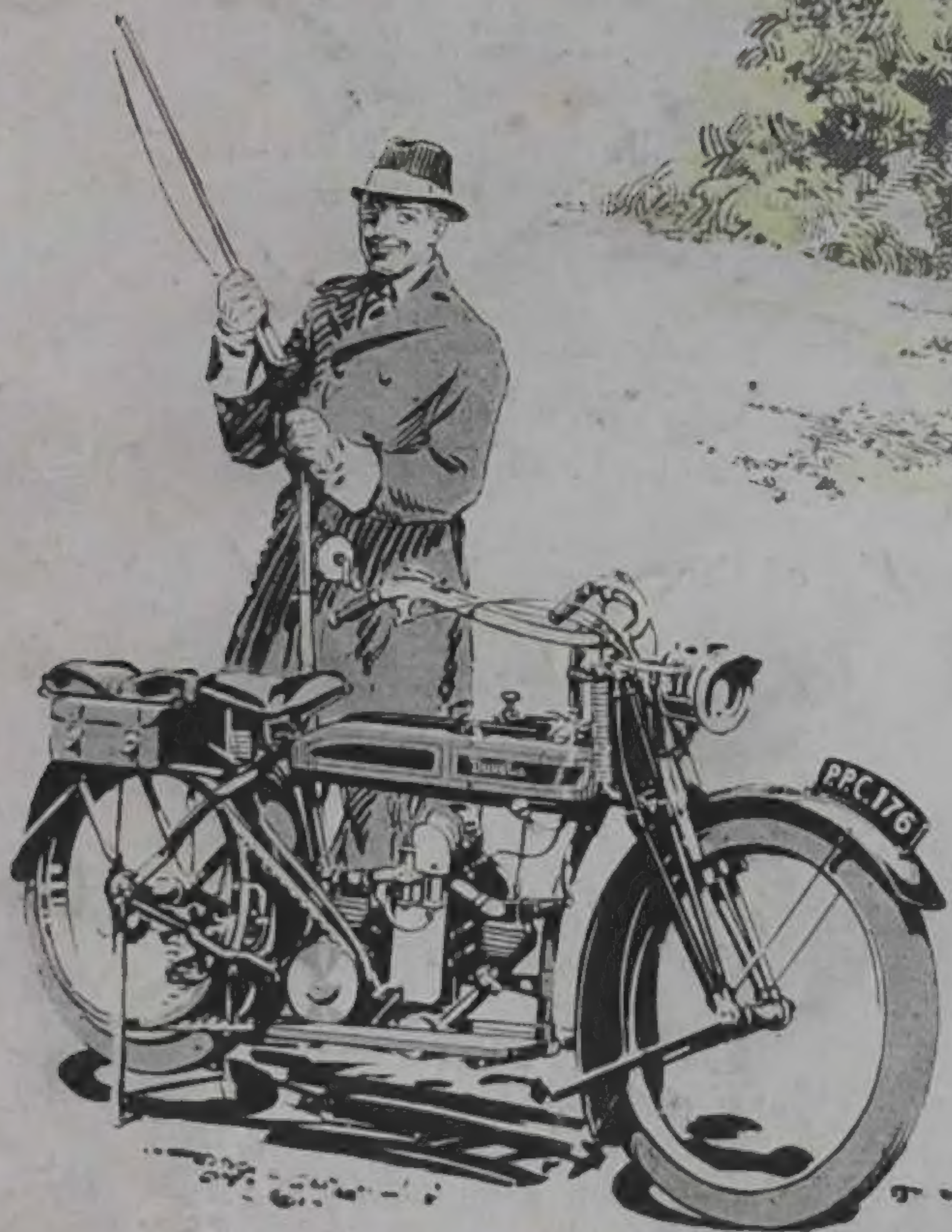
MOTOR CYCLING

No. 471. VOL. XIX.

TUESDAY, 19th NOV.
1918.

*Registered at the G.P.O.
as a Newspaper.*

FOR THE SERVICES



MENAI
SUSPENSION
BRIDGE

VICTORY has arrived—and with it
the opportunity of once again
enjoying to the full the pre-war pastimes
and the joys of the open road!

Order your Douglas NOW!

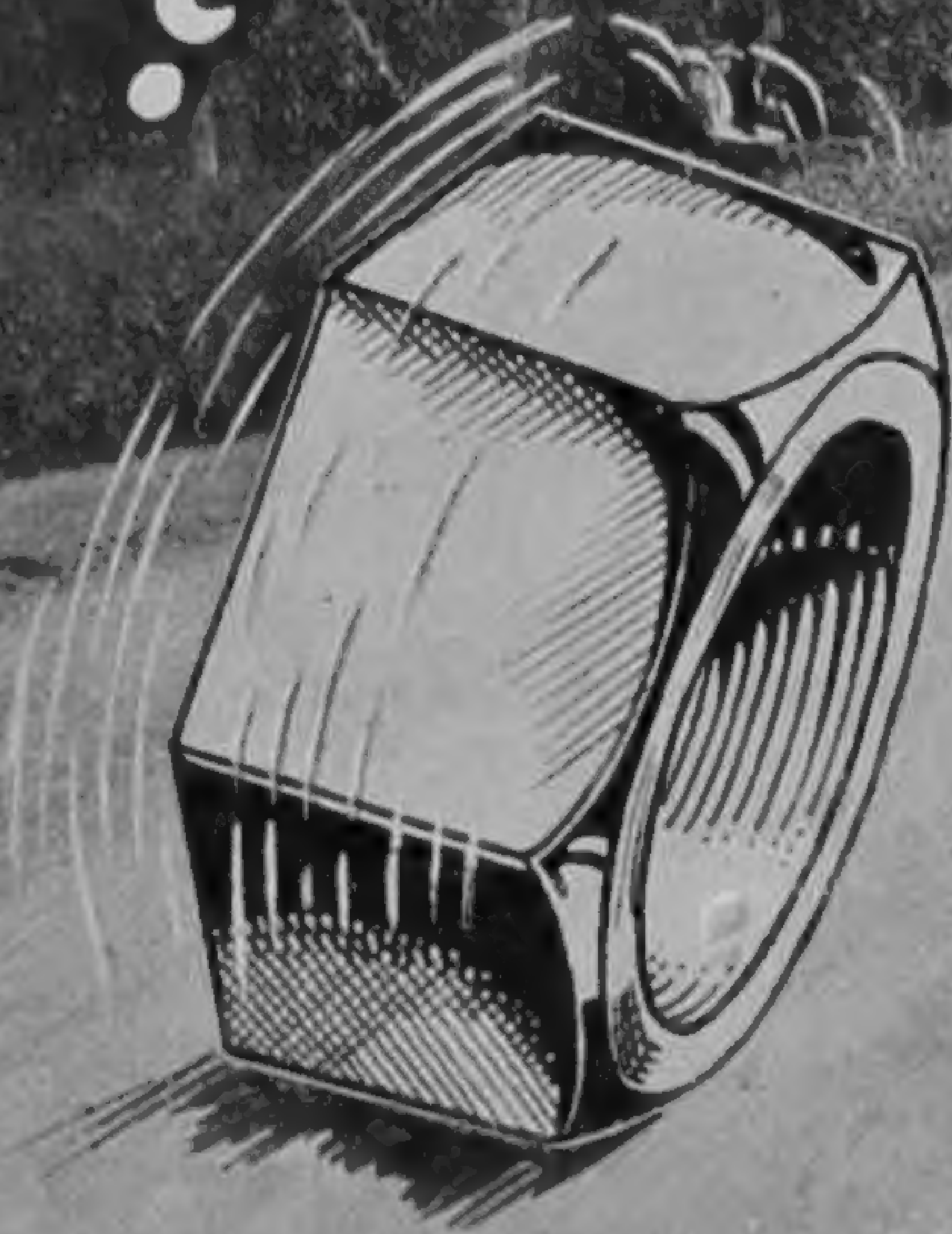
Write for our Catalogue to-day to Dept. 'A'.

DOUGLAS MOTORS LTD.,
KINGSWOOD, BRISTOL.
39, Newman Street, LONDON, W.1.

Douglas

B BRITISH
MAGNETOS **L** IGHTING &
STARTING
SETS **I** GNITION
MAGNETOS **C** OMPANY LTD
204 TOTTENHAM COURT
ROAD LONDON W.1

The Post War ?



N.U.T
NEWCASTLE — UPON — TYNE

Whilst we cannot give deliveries at the moment of our Post-War Model, at all events it will prove a goer and also a doer. In pre-war times the N.U.T. Motorcycle carried off the leading honours on road and track, and we can assure our patrons that after the war we shall not be content to rest on our laurels.

Details on application.

The Newcastle-upon-Tyne Motor Co., Ltd.,
South Benwell — Newcastle-upon-Tyne.

What Riders Say

of the

*New Imperial
"Light Tourist"*



— constitutes a constant record
of satisfaction — such as follows :

" Dear Sirs. —

" I bought one of your 2½ h.p. New Imperial Motorcycles in 1914. You will see I, as Deputy Sheriff and Bailiff, have a considerable amount of running about to do, and over roads that you people would not dare to ride, and through it all, for the past 3½ years, the little New Imperial has carried me without a hitch. I can say that, so far, I have not had a single mechanical stop; my only stops have been through a dirty sparking plug, and this after thousands of miles over roads you wouldn't ride.

" Do you want a better machine than that? Wishing you the best of luck with your after-war models,

" Yours faithfully, F. O. STIRBIT (J.P. for Pietermaritzburg, S.A.)"

16th July, 1918.

*The "New Imperial" will still lead after the war as before. Allow us
to put your name on our information list. Catalogue sent with pleasure.
Enquiries invited from Exoort Agents abroad.*

New Imperial Cycles, Limited, Birmingham. (Established 1887)



The Tables of Fame

The Eighth.

There came a time in the history of a great and prosperous nation when its aid was sought to defend the World from a fierce and brutal enemy. The prolonged struggle so sorely tried even its vast resources that those who controlled its destinies appealed unto the multitudes to save its stocks of fuel, for 'twas said that such would forge the key to victory. But to tell of all the comforts and the happiness that victory would bring was largely left to individual merchants. And so the most progressive set to work and spread the news.

To-day the makers of the

CLYNO

THE Side-car Motor Cycle

tell of the pleasures that their "steed" will bring again to-morrow, its speed and great reliability, its comfort and its safety, its convenience and its sociability, for, of course, it will be built for two. It can, where so desired, be used as solo, but it will be *designed*—and mark you this—to form one unit with the side-car.

Here's the Clyno Post-War Policy—

Mass Production of one Model (8 h.p.)
Competitive Prices of both Outfit and Spares
And Strictly Rotational After-War Deliveries

THE CLYNO ENGINEERING CO.,
Clyno Works, WOLVERHAMPTON



The Glorious Peace

□ • □

To all riders of "*New Imperials*" the world over, felicitous greetings. May God bless our land, our Brothers overseas, our glorious Allies, and all those who by their sacrifices have secured the Liberty of the World.

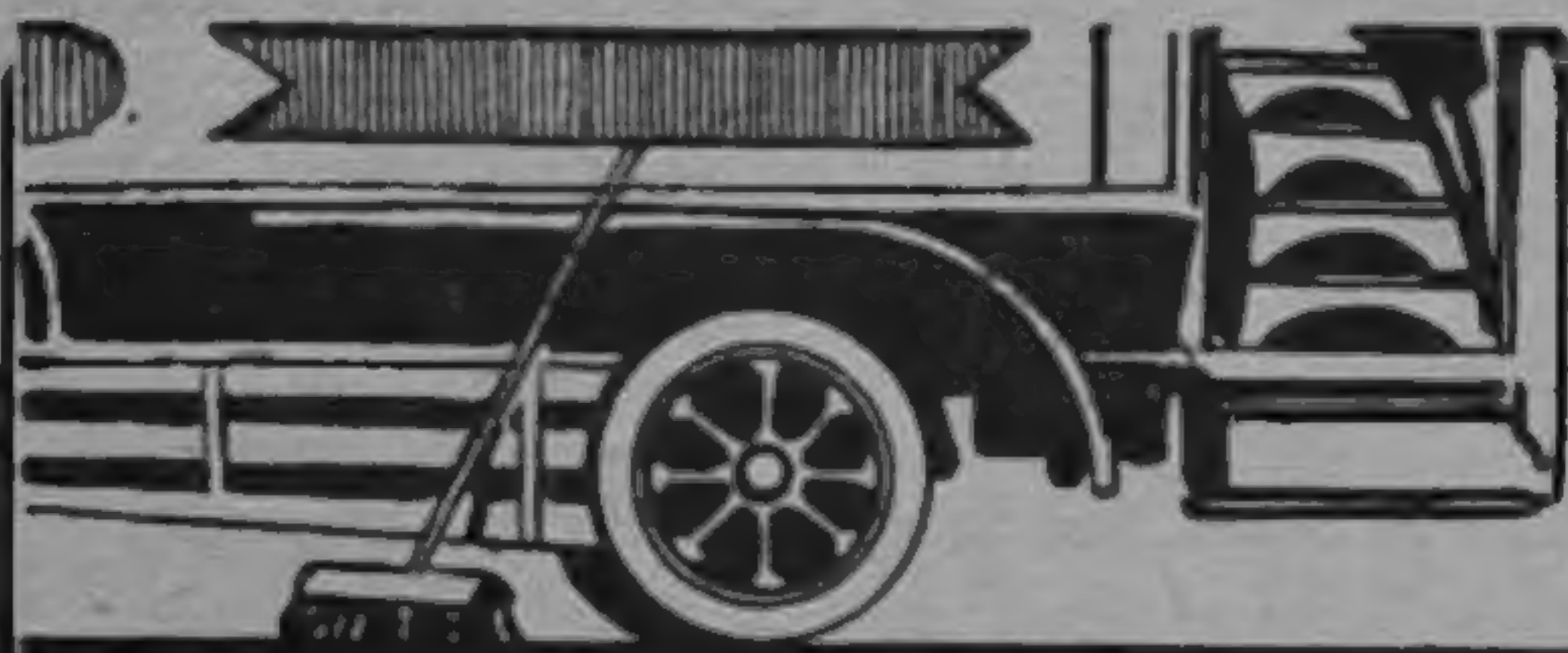
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NEW IMPERIAL CYCLES LTD., BIRMINGHAM.

(ESTABLISHED 1887.)

TWINKO

Is the new non-abrasive hand cleanser. Antiseptic, deodorant and hygienic.



Never mind the Dirt

TWINKO

will remove it.

WHEN you've spent a lot of time in getting your car spick and span, you don't want to lose more time by trying to scrub the grime and grease from your hands, so just use a little Twinko. It cleans hands in a twink.

DIP the hands into cold or warm water, sprinkle a little Twinko on them and rub thoroughly for a minute or two, allowing Twinko time to act, then rinse. Your hands will be clean and white. Keep a tin handy in the garage.

For motor drivers, cyclists, munition workers, housekeepers, farm or garden workers.

IN DREDGER TINS, 7½D.

TWINKO.

Clean Hands in a Twinkle.

VINOLIA COMPANY LIMITED. LONDON-PARIS.



Sold by all leading Chemists, Grocers, Stores, etc.

TW. 7-128

German Admission of British Superiority.

Before the war one observed the old tag everywhere—"Made in Germany"—and deplored the fact that we could not make our own commodities. An exception to the rule, however, was the



Type F7
Detachable.

K.L.G. PLUG

for although Germany made plugs and flooded the British market with them, yet they admitted the superiority of the British by sending for them for the last Grand Prix race. The following facsimile of a telegram received from the manufacturers of the Mercedes car at Stuttgart—which by the way is the home of the Bosch Company—is particularly interesting as well as convincing, more so as the Mercedes finished 1st, 2nd and 3rd.



Sole Manufacturers:
The Robinhood Engineering Works, Ltd., Newlands, Putney Vale, London, S.W. 15.
Telephone: Putney 2132, 2133. Telegrams: "Kaelgee, 'Phone, London."

MAKING HISTORY

The Royal Ruby Cycle Co. takes the opportunity on this historic occasion of congratulating the boys who have so nobly "done their bit" in smashing German militarism, and to the D.R.'s in particular they tend their best wishes for an early return to the Highways of Peace as in days of yore.

ROYAL RUBY

ROYAL RUBY CYCLE CO.,
CANNEL ST., ANCOATS, MANCHESTER.

MOTOR CYCLES

ECONOMICAL INSURANCE FOR MOTOR-CYCLISTS

PROVIDENT ACCIDENT AND GUARANTEE CO., LTD.
ESTABLISHED 1865.

REASONABLE POLICY
CONDITIONS.

PROMPT SETTLEMENT
OF CLAIMS.

15 per cent. REDUCTION
if Insured bears the first
£1 of all claims.

25 per cent. REDUCTION
if Insured bears the first
£2 of all claims.

Extra benefits and Personal
Accident Insurance included
at slightly increased premiums.

H.P.	PREMIUMS FOR PRIVATE USE ONLY. VALUE OF MOTORCYCLE and SIDECAR.	
	Not Exceeding £50	Exceeding £50
Under 3½	£2 7 6	£2 10 0
3½	2 10 0	2 15 0
4½	2 15 0	3 0 0
5-6	3 0 0	3 10 0
7-9	3 17 6	4 7 6

FULL PARTICULARS ON APPLICATION TO

Head Office:—

61, COLEMAN STREET, LONDON, E.C.

Telegrams—"Perpend, Ave, London."

Telephones—London Wall 5306 (4 lines)

BRANCHES:

MANCHESTER - 2, Booth Street
SWANSEA - 4, Gloucester Place
BIRMINGHAM - 41, Temple Street
LIVERPOOL - 3, Cook Street
LEEDS - 5, East Parade
BRISTOL - 1, Clare Street
NEWCASTLE - 5, Collingwood Street

SHEFFIELD - 16, Prudential Bldgs.
SOUTHAMPTON - 36 & 37, High Street
READING - Broadway Buildings
GLASGOW - 68, Gordon Street
DUBLIN - 27, Nassau Street
Du. - 4, St. Andrew Street

SPHINX

THE WAR—the Great Hiatus is over. Let us first and with all reverence and sincerity give thanks to the Giver of Peace.

Let us honour the brave: pay loyal tribute to the fallen. They have won for us a great heritage. Let us worthily uphold it, and as worthily shoulder its many responsibilities.

Let our warmest thanks be accorded to our workers, and particularly to our womenfolk, who, through sacrifice and labour, have achieved a new and noble destiny.

Let us thus congratulate each other that a just cause, supported by brave men and women, and by the unwavering support of the enlightened nations of the World, has overthrown the Unclean Thing that threatened the very life of civilisation.

Then let us resume our several tasks, no longer viewing the world as from a thousand caves of isolated self-conceit, but as fellow-workers in the Army of Progress.



**THE SPHINX MANUFACTURING CO.,
BIRMINGHAM.**

Men of Precision



No. 4.

W. Wilson,
Chief Representative.

W. WILSON.

THERE is no more enthusiastic exponent of the merits of Precision Engines than "Willie" Wilson, known throughout the length and breadth of the motor-cycle trade as the outside representative of F. E. Baker, Limited.

Wilson was born at Arbroath, in Scotland, and moved to London when still a young man. He has all the Scotsman's aptitude for business, a keen sense of humour, a wealth of resource, and a strong determination to play the game in every circumstance.

A natural athlete, a fine footballer and golfer, he frequently represented Woolwich Arsenal at football, and in 1911 he won the Automobile Golfing Society's Cup.

In 1914 he was gazetted a Second-Lieut. in the Queen's Own Cameron Highlanders, was promoted Captain in 1916, and was seriously wounded in May, 1917. He has recently returned to France as a Major in a M.G.C. Battalion, carrying with him good wishes and hopes for his safe return from the customers, and the principals and the staff of F. E. Baker, Ltd.

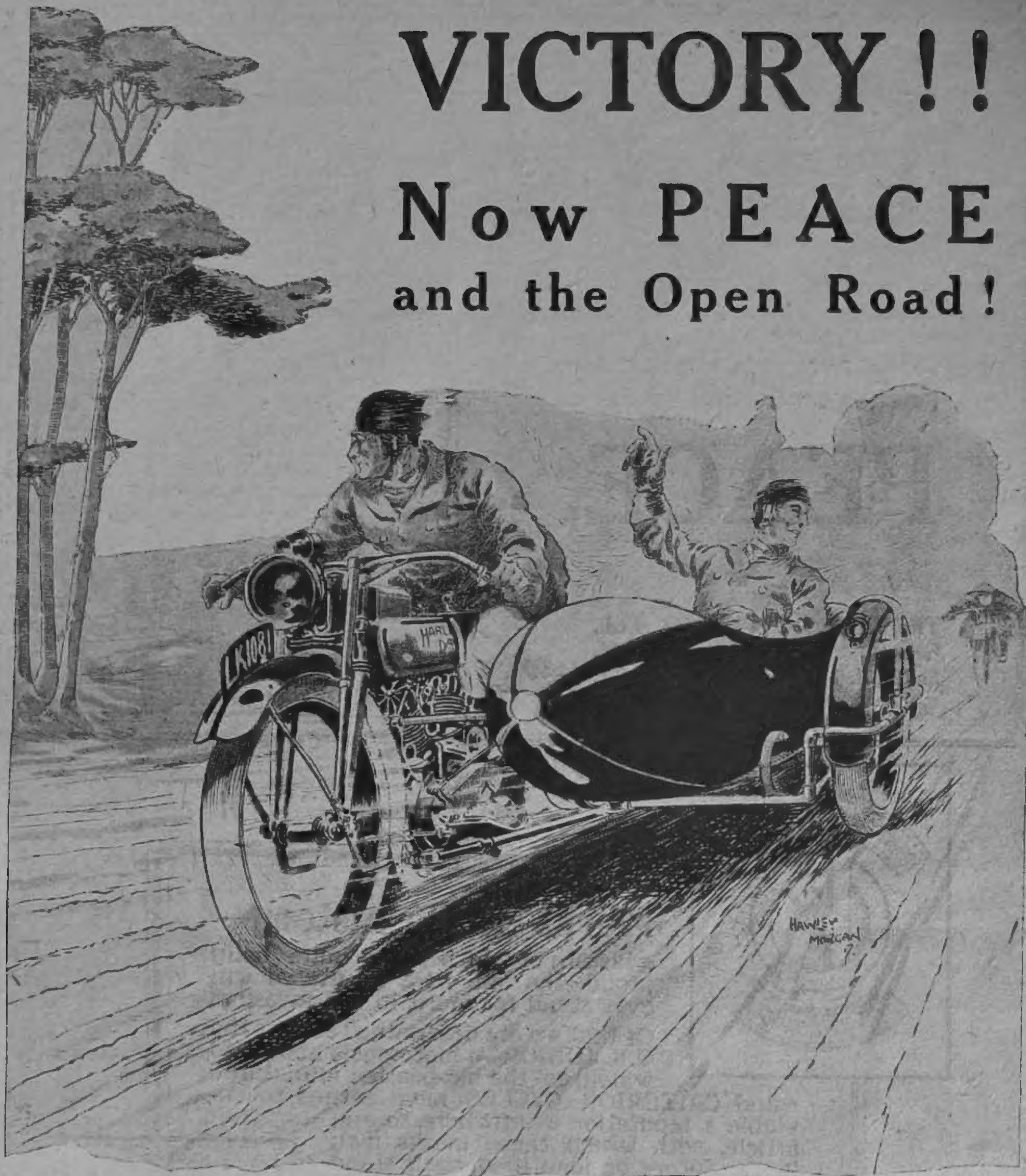


F. E. Baker, Ltd., Precision Works, King's Norton, Birmingham.



VICTORY!!

Now PEACE and the Open Road!



Hearty Greetings to all our Riders and to
every Motorcyclist who has done his bit.

HARLEY-DAVIDSON MOTOR CO., LTD.,
74, NEWMAN STREET, OXFORD STREET, LONDON, W.1.

DO NOT FORGET TO MENTION "MOTOR CYCLING."



Congratulations

to all our Trade and Rider
Friends on the attainment of

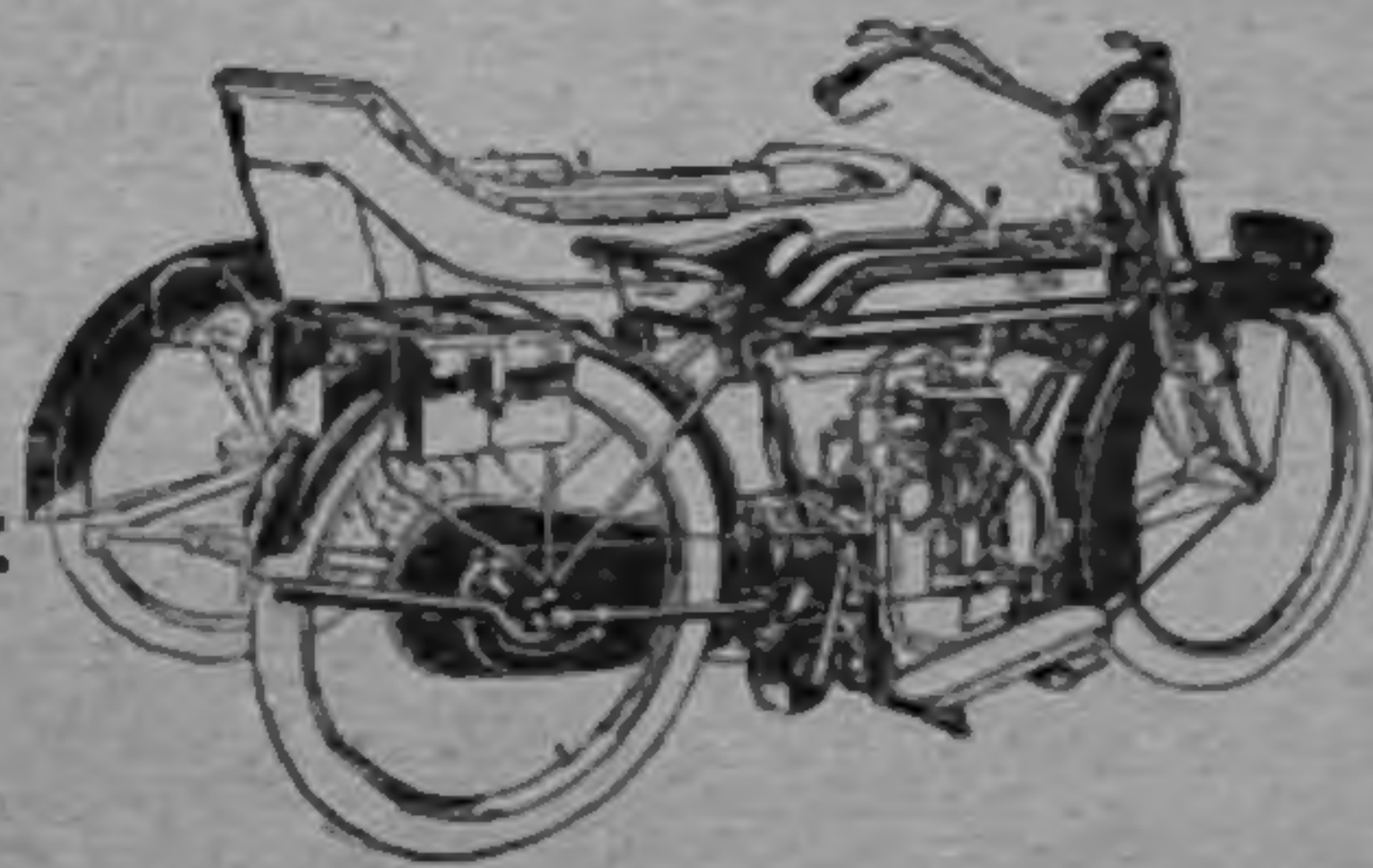
PEACE.

The JAMES CYCLE CO., Ltd.,
Greet - - - BIRMINGHAM.
And 22, Holborn Viaduct, London, E.C.1.

We hasten to assure all our friends that limited supplies of James Motorcycles will shortly be available. Full details of our new models and prices will be published at an early date.

Supplies necessarily for a time must be limited, therefore to avoid disappointment place your orders NOW.

We can answer enquiries immediately; and all deliveries will be made in strict rotation.



R.H.S.

"The Mount worth waiting for."



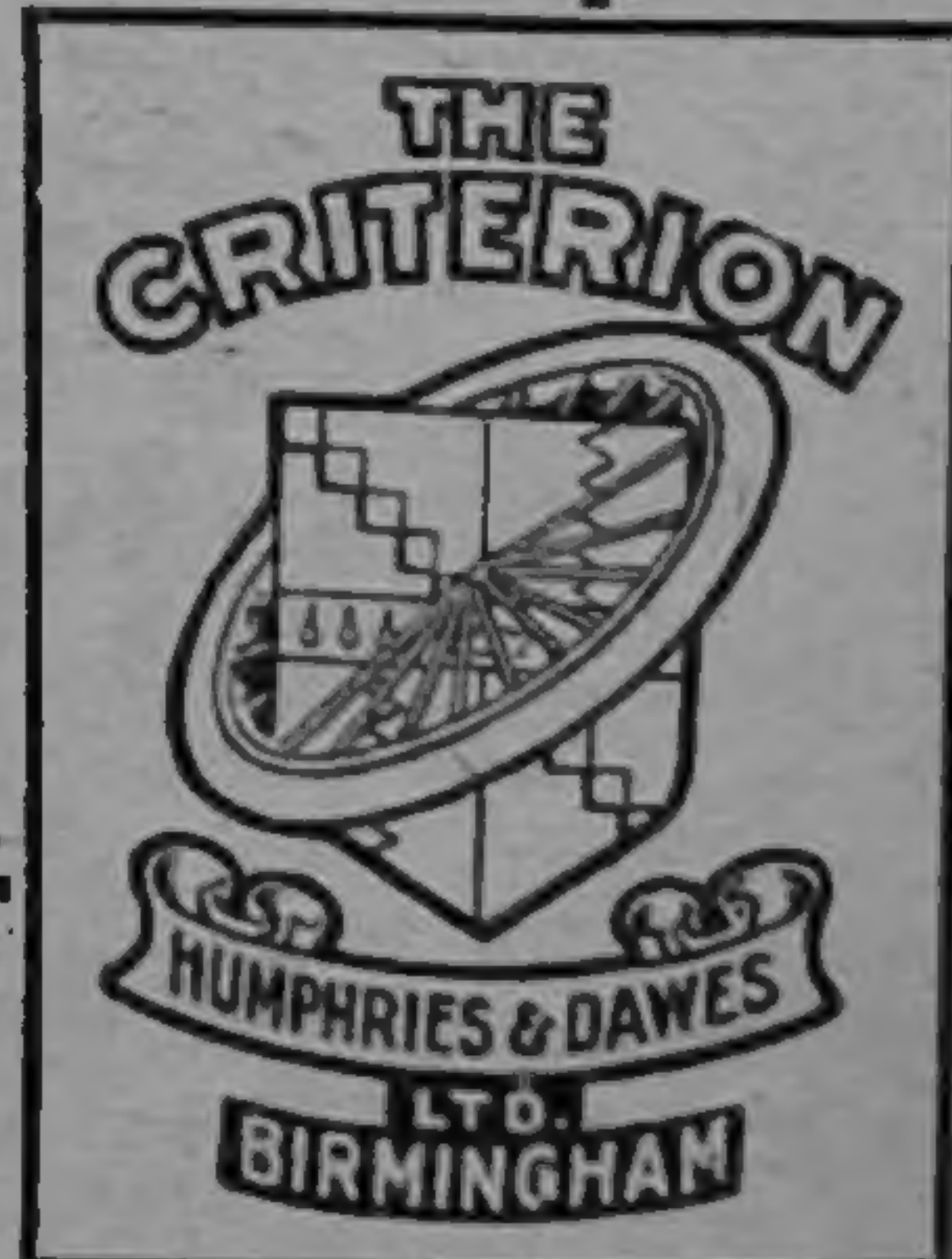
Marks with a history—

a history of which we are quite justly proud—the two here illustrated will ever stand for merit in full measure.

Of that we are determined and, as the O.K. JUNIOR—a motorcycle known so widely as "the big-hearted miniature"

—and CRITERION CYCLES have earned so enviable a reputation everywhere, so any article, with which these marks may in the future be identified, shall stand pre-eminent—the ultimate result of concentrated effort to maintain the prestige of British manufacture and, incidentally, our individual reputation too.

Humphries and Dawes, Ltd.,
Hall Green Works, Birmingham.



Look out Bill.
there's a
shell hole ahead.

BEFORE
SETTLING YOUR
AFTER THE WAR
CONTRACTS SEE

THE **P&H** LTD
POWELL & HANMER
BIRMINGHAM

ELECTRIC SETS FOR
MOTOR CYCLES.

Performance on Active Service

War correspondents have informed the public of the feats of Cavalry in one field of operations; of the exploits of Tanks and Whippets in another, and so on. But there is rarely a reference to the splendid work of the motorcyclists who conveyed despatches, acted as machine-gun sections, and performed many other tasks necessitating speedy transit, and certain accomplishment under conditions unsuited for heavier mechanical transport.

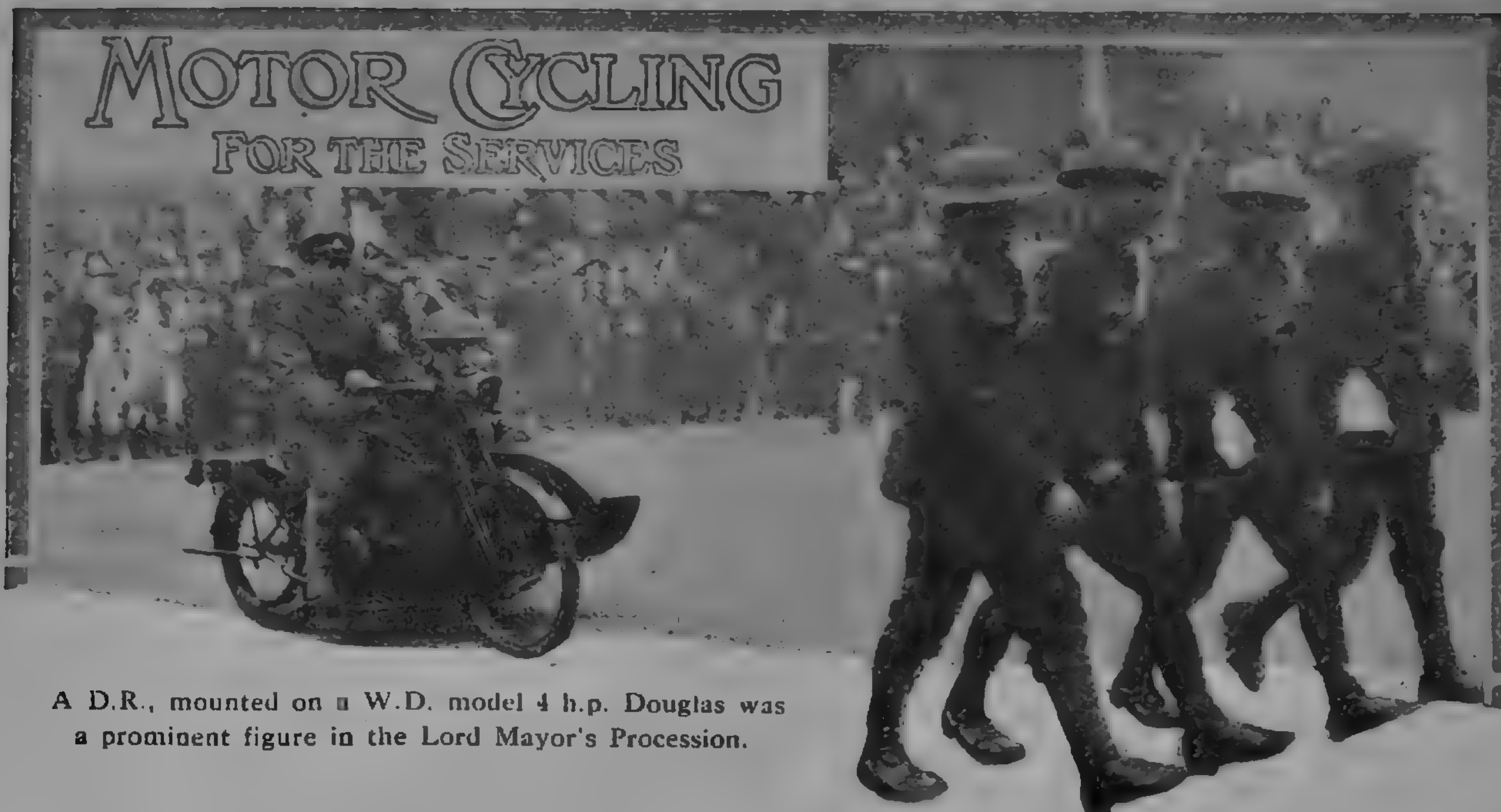
The fighting men have known the Speed, Power, and Reliability of the

TRIUMPH

MOTORCYCLE

of which many hundreds have been in use on the various fronts, and in the coming days its war-tested merits will have much to recommend it.

**Triumph Cycle Company, Ltd.,
Coventry.**



A D.R., mounted on a W.D. model 4 h.p. Douglas was a prominent figure in the Lord Mayor's Procession.

IS D.O.R.A. AN ANGEL IN DISGUISE?

A Novel, But Well-founded Point of View.

THERE are not many motorcyclists who have a good word to say for Dora, for she has put down with a stern hand all motorcycling for pleasure, and even those whom she has had perforce to allow to ride for business purposes have been hampered and annoyed by her multitudinous regulations. Yet I fancy that to motorcyclists she will in the end prove to have been an angel in disguise; she has been cruel but to be kind.

Let me explain: For many years I have been an ardent motorcyclist. Motorcycling has been my one hobby, and my spare time has always been divided between riding and tuning; when not on the road I was in the garage, satisfied if only I could be doing something to the machine. Just 12 months ago I owned a nearly new single of world-wide fame; it had carried me some 5000 miles with great satisfaction, when Dora decreed that henceforth it must be ridden no more. So for 12 months it has languished in its shed unused. My experience, of course, is that of hundreds of other riders, and so far there seems to be no reason why I should bless the restrictions which have cut me off from indulging in my favourite recreation.

A week ago, however, altered circumstances enabled me to obtain permission to use my motorcycle daily for certain business purposes, so at 8.30 one morning I wheeled the machine out into the road. A push and I was in the saddle, and in a few yards snicked back the gear lever into top. But what had happened? The engine was making a terrible fuss while I appeared to be travelling at a snail's pace. What was the matter? Was I still in second, or was the clutch or belt slipping? Investigation proved that all was in order, and then I realized what was the trouble. For a year I had not been on a motorcycle, and all my road travel had been performed on smooth-running and silent cars. The noise and rattle of my old single had never been apparent to me when I rode it daily, but now that it was unfamiliar it forced itself on my attention in an

unmistakable fashion. That engine seemed to make a terrible racket; I could hear the noisy valve gear rattling, the magneto chain grinding, and the primary drive chain shrieking and muttering. I seemed to be able to feel every explosion of the engine, and when I reached a stretch of bad road even my well-tried XL-All saddle was unable to insulate my spine from the road shocks to a reasonable extent. What I had 12 months ago considered to be quite a respectably quiet and comfortable machine now seemed to me to be a noisy and uncomfortable contraption. This effect continued for the first few days, but I am gradually becoming accustomed to the row and racket, and soon I shall fail to notice the noise and bumps at all. Yet the experience has convinced me that the machine which was once my pride and joy is really noisy and uncomfortable, and I have made up my mind that at the first opportunity it must go and be replaced by a machine with a silent and smooth-running engine.

That is why I think that Dora may prove to be a blessing in disguise, for other riders will surely experience sensations similar to those I have described when first they start riding again. Thus they will realize the shortcoming of their old machines, and will insist on being supplied with something better. Only because they were accustomed to the noise and discomfort did they put up with it before the war. If riders as a body can be made to realize how crude the average pre-war machine was in these respects they will demand improvement, and the trade will be forced to supply comfortable and quiet machines to meet the demand.

Should that come to pass, as I believe it will, as a result of the complete cessation of riding enforced by Dora, we shall have to thank the regulations for a great improvement in machines, and Dora will, indeed, have proved to have been a real angel in disguise.

D.S.H.
All

EDITORIAL

New Machines—Now?—Rationed Spirit, and a Drop in Price—The Case for an Early Show.

THE War closes with a condition of affairs in the motorcycle industry which, if we correctly understand matters, is unique. Although practically every industry will be at a standstill during the transition from War to Peace, the manufacturers of certain makes of motorcycles will be, unless our information is incorrect, in a position to supply new motorcycles at once. That this will be an advantage to the manufacturers in this fortunate position, and have a serious aspect for other concerns unable to get going for some months, is obvious, although the public will have no cause for complaint. Probably matters will be levelled up in a very little while, but it certainly looks as if there will be a mild boom in motor cycling so soon as the Motor Spirit Restriction Order is removed.

When May We Motorcycle?

THE amendment, suspension or cancellation of the Order may come at any moment. The termination of the war automatically reduces the demands of the Services upon our petrol supplies, and although stocks of petrol, contrary to popular impression, are not unduly inflated, it is obvious, at the rate which they will increase during the next few months, there will be such ample supplies that there can be no further reason for withholding a reasonable allowance for recreative motoring. We urge that in petrol rationing—and we see no reason to doubt that it will be rationed for some time to come—more generous allowances should be made for Red Cross work, and for the use of wounded, convalescent or discharged officers and men, compared with the allotment to the general public. In this connection, we are frequently asked to press the authorities to permit existing private stocks of petrol now to be used up. This is a matter which depends entirely upon rescinding the Motor Spirit Restriction Order, to the importance of which everyone who has the welfare of the pastime at heart is fully alive.

Cheaper Petrol.

THE next important consideration is that of cheaper fuel. At present we are paying 3s. 8d. per gallon for a very poor fuel, which apparently contains a very good proportion of paraffin. The price should be reduced by at least 1s., and the super tax of 6d. per gallon should even then be included in the price, which would leave the distributors a price of 1s. 8d. per gallon from which to collect their various profits and charges, considering that the best quality petrol could be sold at 8d. per gallon in the days when distributing facilities were not nearly so complete as now, and that wholesale supplies to commercial motor undertakings were at an even lower figure. We do not think the suggestion is unreasonable. We are hoping, also, that the vast supplies of benzole—estimated at 100 million gallons per annum—released by the cessation of the manufacture of high explosives will also be available, for benzole is a fuel of proved value, infinitely preferable to "War Spirit" No. 2,

which is all we have been able to obtain for some time. We see it is stated that there is no intention of releasing benzole at present. In our opinion steps ought to be taken at once to see that supplies of such an important substitute should be secured with the least possible delay. Benzole could be sold at a far lower price than petrol, which fact would of itself reduce the inflated price of "War Spirit."

The First Competition and the T.T.

IN the great period of reconstruction before us we must be alive to the importance of organizing the advertising side of the pastime. By that we mean the competitions, races and shows. Last week, Major S. R. Axford, the well-known competition rider, urged the necessity for taking immediate steps to revive the T.T. in 1919, suggesting August—why not May?—as the suitable month. We are in entire agreement. We need not wait for the T.T. before reorganizing competitions. We hope to see that great motor-cycling institution, which has done more for the pastime and sport than any other body, the Motor Cycling Club, reconstituted in the very early future, and commence preparations for reorganizing its annual series of competitions. Can we look forward to the Land's End Run at Easter as the first motorcycle competition?

An Early Show.

ANOTHER matter for urgent attention is the organization of a manufacturers show, at which all the Peace models could be exhibited. In our last issue, also, a correspondent put forward the very practical suggestion that such a show should take place early in the New Year, so that the great number of Overseas troops who will be passing through London could see the machines, especially Colonial models. In this connection we hardly think that an exhibition on pre-war lines would suffice. What is wanted is a more permanent exhibition on the scale of the Lyons Fair. It may be urged that it would not be worth while organizing a show until the manufacturers were more assured of being in a position to produce motorcycles in quantity. We think they would. Undoubtedly no difficulty would be experienced in obtaining a release of material for the construction of experimental models, and the same can be said for the production of show machines. A show would be of the greatest possible value to the industry. It would stimulate, or rekindle, interest in the motorcycle in this country. It would be a great advertisement for British machines, for a vast number of people in transit to their homes in all parts of the world. Given such an opportunity, it can be imagined what the American manufacturers would do with it. America has no such chance of interesting thousands of potential purchasers so easily. We feel sure that an early show, even if it called for a great deal of enterprise at a critical time, would have far-reaching effects.

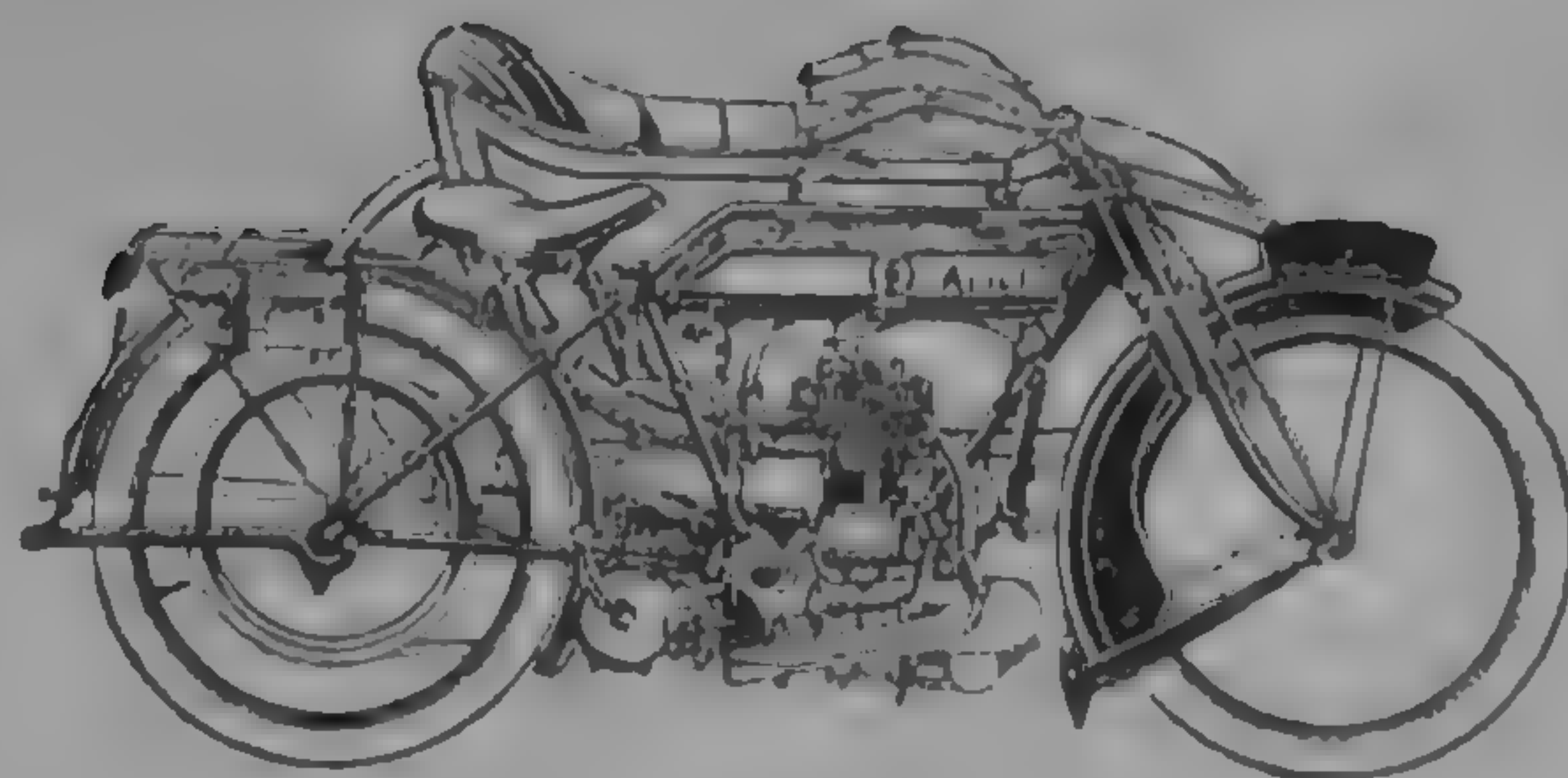


Our service to owners as good as our motorcycle.

We have always striven to make our service organisation as efficient as the Ariel machine. Evidence of our success is provided by the following testimony from an owner in the Midlands:—

“It is extremely kind of you to take so much trouble over a small thing. It is gratifying to know that your service comes up to the general excellence of your products.”

Art Catalogue post free from—
ARIEL WORKS, LTD., 4, Bournbrook, BIRMINGHAM.



If we Reprinted Every Testimonial

we received from Royal Enfield riders we should need to issue a volume almost equalling in size the bulkiest of Trade Directories. In these days of expensive paper and printing such a book would be costly beyond measure.

But such letters coming from motor cyclists in all parts of the world are of particular interest to the purchaser of a post-war motor cycle. We have, therefore, reproduced a few of these testimonials, typical of the many, in an illustrated volume entitled: "TESTIMONY THAT TELLS." We shall be pleased to send a copy of this on request.

**THE ENFIELD CYCLE CO., Ltd., Redditch,
and 48, Holborn Viaduct, London, E.C. 1.**

Contractors to His Majesty's Government, the U.S.A., French and Belgian Governments, and the (former) Russian Imperial Military Authorities.

ROYAL ENFIELD

DELIVERY OF NEW MACHINES.

The Present Position of the Trade.

WITH the object of enlightening readers on the possibilities of the early purchase of new machines, we have got in touch with most of the prominent manufacturers, inviting them to give details for publication as to their position regarding deliveries, what models would be first available, and, where possible, their retail prices.

It should be stated right away that the governing factor at the present time is the shortage of steel, aluminium, and phosphor bronze. A meeting of the Cycle and Motor Cycle Manufacturers and Traders Union was recently held at Coventry, when it was decided to approach the Priority Department of the Ministry of Munitions immediately with the idea of obtaining the early release of quantities of these essential metals, but up to the time of writing we understand that the desired steps have not been taken. This shortage of raw material undoubtedly explains the fact that so many prominent concerns cannot, as yet, give definite details.

Appended is the position of various concerns so far as they are ascertainable at the moment. Readers of MOTOR CYCLING can well be kept posted right up-to-date with all possible information. In the past MOTOR CYCLING has invariably been the first with the news, and it can be relied upon to maintain its reputation in this respect.

P. & M.

Mr. Marians expresses his personal view that the Government would be using motorcycles on very nearly the same scale as at present for the next two or three months. Messrs. Phelon & Moore are in the happy position of being able to make deliveries to the public immediately present Government contracts cease. For two to three months the model available will be the present W.D. model single-cylinder, which is giving such satisfaction in the hands of the R.A.F. After this period the post-war 3½ h.p. single-cylinder model will be ready for the public in quantities. Actual details are not as yet available, but we are permitted to state that the retail price will be £78.

CHATER-LEA.

This concern will concentrate on the manufacture of the well-known No. 7 sidecar outfit with the 8 h.p. Chater-Lea engine. It will be practically the 1914 model, with only slight detail improvements for the time being. The price is not yet fixed, but it is hoped to announce deliveries in about two months. There will also be a limited number of the lightweight model, which was produced shortly before the war. Messrs. Chater Lea will, of course, continue the supply of component parts, which can be obtained by the public through the usual trade sources.

MATCHLESS.

Messrs. Collier and Sons, Ltd., are in the same happy position as P. & M.'s; that is to say, they can make limited deliveries to the public immediately their Government contracts cease. For the time being they are concentrating upon their military type combination, an early description of which appeared in our issue of 19th June, 1917. The engine used is the 8 h.p. twin J.A.P., the power being transmitted to a three-speed gearbox by a silent chain, the final drive being by roller chain.

Machines of this type have had a very severe test-

ing in the hands of Service riders, and have proved eminently satisfactory. The retail price has not been fixed at the time of writing.

ZENITH.

In common with many other motorcycle manufacturers, Zenith Motors, Ltd., have devoted their factory for a considerable time past to the production of munitions. A change over to the manufacture of motorcycles is not a matter which can be completed in a day, but we have Mr. Bowers' authority to state that production will commence immediately the priority department will authorize the liberation of steel for the purpose. For the time being the models will be the 4-5 h.p. for solo work and the famous 8 h.p. for sidecar work. Prices of raw material, particularly aluminium and phosphor bronze, are so unsettled, to say nothing of the labour question, that for the time being it is unsafe to quote any retail price.

IXION.

The range of models will remain the same as before the war, but many improvements are being introduced, full details of which we hope to give in an early issue. Delivery is stated as being possible in five weeks with the exception of the de luxe model, which will not be obtainable until some time in January next. The problem of prices of raw material and labour prevents the quoting of retail prices for the time being.

O.K.

Messrs. Humphries and Dawes, Ltd., estimate that it will be from three to four months before they are in a position to supply the general public. At the moment, neither details of the models to be marketed nor their prices can be given, but naturally the concern expect to make the most of their valuable war experience when once they get down to production.

LEVIS.

A limited number of these popular machines will be available for immediate delivery directly the present restrictions are removed. For the time being the models available will be precisely as given in the current catalogue, and the same prices will rule.

JAMES.

Whilst the James Co. are not in a position at the moment to forecast deliveries or give details, they hope that within the next fourteen days the information in their possession regarding the delivery of raw materials will warrant them disclosing their programme.

BLACKBURNE.

We hope to be in a position to give full details of models, prices and deliveries in an early issue, probably next week.

INDIANS AND HARLEY-DAVIDSONS.

The position of the concerns handling American motorcycles is very difficult. For some time past they have been unable to obtain deliveries owing to the embargo on imports, and at present it is, of course, too early to say what modification of the transport position is to be expected. Neither the Hendee Manufacturing Co. (Indians) nor the Harley-Davidson Motor Co., Ltd. (Harley-Davidsons), is able to make any definite statement as to deliveries. Both their factories over in the States have been entirely devoted to turning out Service motorcycles, so that it can be confidently expected that as soon as the American Government conclude existing contracts they will be in a position to go right ahead to supply

Delivery of New Machines (contd.).

the public. The 1919 programmes of both companies have been given in recent issues of *MOTOR CYCLING*, and it can be taken as a fact that the models eventually to be imported into this country will be on the lines of those so described.

The question of price, too, is another point which cannot be settled as, while at the present time there is a heavy import tariff in operation, it is confidently expected that this will be reduced when shipping conditions become easier.

BAT.

Mr. Tessier is not able to give any definite information regarding his peace programme, but the admirers of this popular machine will be interested to know that the Bat will be available in the future. Inquiries are not invited at the moment, but *MOTOR CYCLING* will be able to give further information in due course.

NORTON.

The models to be marketed will be the famous Big Four with all-chain drive; the 3½ h.p. (500 c.c.), with belt drive, and the same model with Sturmey-Archer three-speed gearbox and chain-cum-belt drive. Both prices and delivery are too indefinite to be published at the moment.

ALLON.

Messrs. Alldays and Onions notify us that they propose to specialize on the production of the Allon single-cylinder, two-stroke, medium-weight machine, which proved so very popular prior to the war. Profiting from the experience gained by the considerable number of these machines which have been in use during the past four or five years, they are able to incorporate detailed improvements wherever these have been found necessary. A complete description of these minor changes will appear in an early issue of *MOTOR CYCLING*. During the period of the war Messrs. Alldays and Onions have perfected their manufacturing arrangements and are now able to produce these machines in large quantities as soon as working conditions allow. In this manner they ensure economical production and perfect interchangeability.

Deliveries of the Allon will commence within three or four weeks after the concern is liberated from Government control, and the manufacturers are now in a position to accept orders for execution in rotation. The machine will be supplied with complete equipment, and the retail price will be fixed during the next few days.

RADCO.

A new model is now well in hand, but the manufacturers are not in a position to disclose particulars or delivery date at the moment. In the meantime Messrs. E. A. Radnall and Co. will be pleased to furnish inquirers with illustrated list of their late model, and will register their addresses with the idea of sending them particulars of the new model at the earliest moment.

NEW IMPERIALS.

Mr. Norman Downes has not let the grass grow under his feet, and the advent of peace finds New Imperial Cycles, Ltd., with their intentions clearly

defined. The concern will specialize in two models. The first of these is the New Imperial Light Tourist, fitted with either a two-speed gear or, alternatively, a two-speed gear, clutch and kick starter, this machine being intended solely for solo riding. Sidecar enthusiasts will be catered for by the 6 h.p. or 8 h.p. model. This is the machine which has stood up so well to war service, and, fitted as it is with the concern's excellent three-speed gear and all-chain drive, is capable of meeting any demand which might be made of it. It will be remembered that the full specification appeared in our issue of the 15th ult., while an illustration will be found in our last issue.

A spring frame will be incorporated at an early date. When this is obtainable an announcement will appear in *MOTOR CYCLING*.

The manufacturers have been looking well ahead, and have made such arrangements with their distributors as should ensure machines getting into the hands of riders with a minimum of delay. It is their intention to make deliveries as equitable as possible, but if purchasers find any trouble in obtaining delivery it is hoped they will communicate direct. Agents will furnish prices and further particulars on request.

DIAMOND.

While the manufacturers of this popular machine are devoting their attention to an improved model, they estimate that it will be at least four months before this is available for delivery. In the meantime they are continuing the manufacture of the models which were current during 1916, when they last supplied the public. Minor improvements are being incorporated, and deliveries of these models can be made in from four to six weeks, at which time prices will be fixed.

CONNAUGHT.

The Bordesley Engineering Co. advise us that they are still busy on munition work, and when they are liberated from this they will be able to give attention to a quantity of machines which they had to leave unfinished when taken over by the Government. In view of the uncertainty of the raw material position they cannot bind themselves as to delivery date or prices.

It is their intention, when conditions become normal again, to market a popular price model, and a superior machine which will incorporate either a two or three-speed gearbox.

PARTICULARS IN ABEYANCE.

A large number of prominent concerns are waiting the release of essential materials and the settling down of labour conditions before they are in a position to disclose any particulars of their intentions. This is the present position of the manufacturers of the following motorcycles:—

A.J.S.	BRADBURY.
CONNAUGHT.	HUMBER.
ARIEL.	ROVER.
SCOTT.	CALCOTT.
SUNBEAM.	ENFIELD.
COVENTRY PREMIER.	NEW HUDSON.
VELOCE.	ROYAL RUBY.

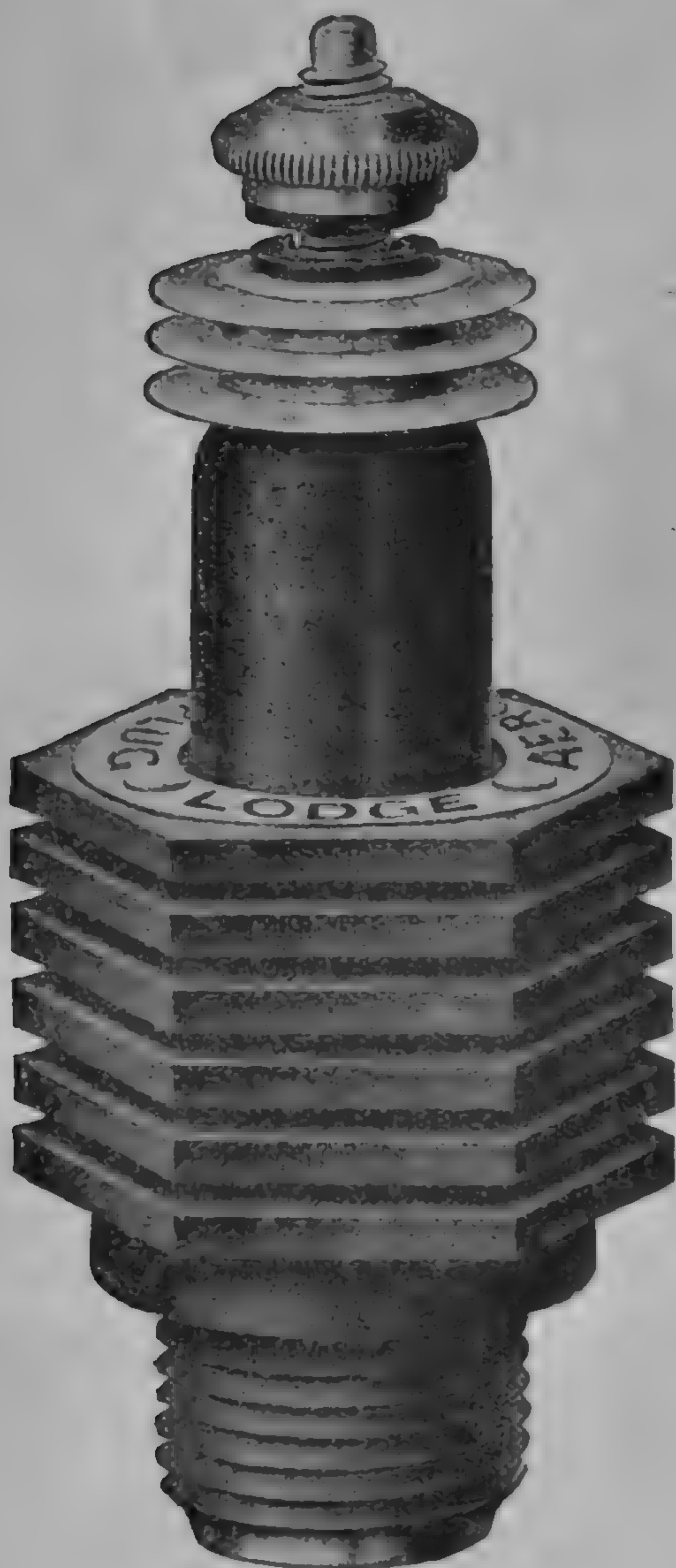
RUDGE-WHITWORTH.

INDUSTRIAL CONFERENCES.

IN view of the success which has attended the fortnightly conferences and discussions now being held by the Industrial Reconstruction Council, and the universal demand for their continuance, a second series has been arranged for January, February and March of next year. They will be held on Tuesdays, as before, in the Hall of the Institute of Journalists, at 6 p.m. The first, under the title of "Reconstruction or Restoration?" will deal with the general principles which should guide us during the difficult transition period, and

will be opened by Major H. J. Gillespie, D.S.O., on 14th January. The other meetings will discuss the Workers' Interest in Costing, the Place of the Merchant in British Industry, Welfare Work, Wages and Conditions of Employment in Relation to Future Industrial Prosperity, and Industry and Educational Reconstruction. Those who intend to be present are asked kindly to inform the Secretary, I.R.C., 2 and 4, Tudor Street, E.C. 4. No tickets will be issued and large attendances are expected.

LODGE



WAR.



PEACE.

THE LODGE SPARKING PLUG CO., LTD., RUGBY.

PEACE and PETROL
on EARTH again

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Send your Order at once to secure early delivery.



BROOKS B.170

The Saddle
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compound
springs

Combining great elasticity with
ample reserve of strength, a BROOKS
will increase the pleasure of a ride as only
a saddle scientifically constructed can—that's why

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is invariably the choice of the man who buys the best.
And, bear in mind, that on no other saddle can you
ensure that immunity from road shocks and the bouncing
action which usually follows—for in none other can
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77, Criterion Works,
BIRMINGHAM.

NEWS in

BRIEF

Lighting-up Times for Saturday,
23rd November, 1918.

London	4.30 p.m.
Newcastle	4.20 p.m.
Birmingham	4.33 p.m.
Edinburgh	4.51 p.m.
Liverpool	4.31 p.m.
Bristol	4.41 p.m.
Dublin	5.11 p.m.

Lighting-up time for Ireland and Scotland is one hour after sunset, but the Scottish lighting regulations (vehicles) come into effect half an hour after sunset.

Lighting-up time in England and Wales is half an hour after sunset. Moon.—Rises 9.47 p.m.; last quarter 25th.

First With the News.

IT was interesting to read in the daily Press that the first news of the signing of the Armistice was given to the men in the trenches by D.R.s.

Helping in the Celebrations.

WE always understood that the War Office motorcycles were considered "hot stuff," and probably the Mafeking crowd had this in mind when they threw one on the bonfire in Trafalgar Square on Tuesday night.

Imports of Motorcycles Possible.

GREAT uncertainty prevails regarding the question of importing American motorcycles. Numbers are ready to be sent over if the restrictions on imports are removed. It was announced in the House of Commons last Thursday that "steps had already been taken to relax the prohibitions on imports and exports."

Peace Number.

NEXT week's issue of MOTOR CYCLING will be full of news of the greatest importance to motor-cyclists in view of the early approach of normal times. Watch our columns closely for the earliest details of new models and information regarding the motor spirit restrictions. If you have not got a motor spirit licence now we may be able to give information on getting one.

Change of Title.

MESSRS. Hobart Bird and Co., Ltd., ask us to announce that in order to denote the particular class of trade that they are engaged in, it has been decided to change the name to Hobart Cycle Co., Ltd. This change of title has been sanctioned by the Board of Trade, and henceforth the company will continue to trade as cycle and motorcycle manufacturers under the new title.

The Cyclecar Club.

WILL all members of the Cyclecar Club communicate their present address to the hon. secretary, Mr. A. C. Armstrong, 7-15, Rosebery Avenue, London, E.C. 1? It is intended to re-establish the club early in the new year, but the difficulty of calling a general meeting with the members so scattered is very great. A scheme of re-titling the club and extending its scope is contemplated.

Humbers' Dividend.

WHILE delays caused by the difficulty of valuing the stock and ascertaining the amount of the concern's liability for excess profit duty, the directors are able to announce that a satisfactory profit has been earned, and to declare a 6 per cent. dividend on the ordinary shares in addition to preference dividend. It is interesting to note that this is the first ordinary dividend since the amalgamation and reconstruction.

The Women Police.

WE understand that the motorcycles now in use by this important body are 4 h.p. Sunbeam combinations.

More Light.

THE restrictions on motorcar and motorcycle headlights are to remain in force until the streets are once more fully lighted, and the police have instructions to take proceedings against any person ignoring the present by-laws. It is interesting to note that the Gas Light and Coke

Co. have over 500 men employed in cleaning the 40,000 lamps which they control between the Tower and Hendon, while the South Metropolitan Gas Co. are employing 300 cleaners on the 27,000 lamps within their radius.

Bare Justice.

"THE Daily Mail" thinks it would be bare justice to the industry to release petrol for business and professional purposes and boasts of being the first newspaper to advocate the stoppage of joy-riding.

A Big Dividend

THE profits announced by Messrs. Rudge-Whitworth for the year ended 31st July last permits of a dividend of 20 per cent. as against 10 per cent. declared for each of the three preceding years. This dividend is the largest ever declared by the concern, and it is further interesting to note that it is free of income tax.

Raw Material.

WHILE no doubt concerns like the Triumph and Douglas have stocks of machines ready for sale to the public, if they are no longer required by the War Office, the majority of manufacturers cannot proceed with the manufacture of motorcycles until supplies of raw materials are available. We understand that iron and steel are to be released forthwith and all other materials will be released very quickly. Maximum steel prices are to be fixed, and when this is done it is probable that the manufacturers will be in a position to announce their new prices.

£1000 Motoring Prize.

THE Automobile Association has received several entries for its competition for a £1000 prize offered for the best system for enabling coal-gas to be satisfactorily used as a fuel for motor vehicles. In addition, a large number have signified their intention to compete for the prize, but have not yet definitely entered as competitors. The closing date for the competition is 31st December. Those who have postponed their entries should communicate at once with the Secretary, Automobile Association, Farnham House, Whitecomb Street, London, W.C. 2.

Double Fatality.

AS the result of a collision between a motor tender and a military motorcycle and sidecar, the driver and passenger of the combination were killed while proceeding from Thetford in the direction of Norwich. It appears from the evidence at the inquest that the accident happened at dusk. The tender headlights were already lighted, but the motorcycle and sidecar had no lighted lamps. It was further disclosed that there was no doubt but that the motorcycle and sidecar was on the wrong side of the road when the collision took place, and as the unfortunate driver was an American, it would appear that in the excitement of the moment he steered on the wrong side of the road in error. Such accidents are not of frequent occurrence, but they point to the fact that the lighting-up times for all road vehicles might well be made even earlier than at present.

News in Brief (contd)

What We Want to Know.

WHAT everybody is asking now is when will petrol be released? When will the lighting restrictions go? How soon will it be possible to get hold of a new motorcycle?

Armisticing.

DID you "armistice" last week? We saw plenty of motorcyclists running about the streets of London with loads of five or six, cheering, tooting horns and waving flags. The petrol restrictions were generally ignored and Army lorries were frequently careering about carrying "armisticers."

Demobilization of Key Workers.

THE manufacturers are urged to advise the authorities without delay of the men formerly on their staffs for whom they have jobs waiting, especially key workers. The men will be released in the order of their importance. Trades will be grouped in some order of priority and husbands and men long at the front will have preference.

Larger Petrol Allowances.

THE Automobile Association is authorized by the Petrol Controller to state that the present petrol allowances may shortly be increased. Business motorists will be the first to receive larger petrol supplies; as soon as peace is signed it is anticipated that petrol allowances will be granted for ordinary motoring. The extent to which allowances will be increased will greatly depend upon requirements for military motor transports following upon the signing of the armistice. The Association has, however, received an assurance that the present restrictions on petrol consumption will be removed as rapidly as possible.

The Climax.

AN official climax to the rioting, horse play, unofficial rejoicing and general tomfoolery which has been mingled with more-restrained expressions of gratitude at the end of the war is being demanded. It is suggested that if the rockets at anti-aircraft stations could be let off, the searchlights flashed out, great displays of fireworks given and the sky alive with illuminated aircraft, the crowds would be satisfied and settle down to a peaceful peace. Otherwise, we presume, they will go on making bonfires of German guns and British motorcycles.

Health Rides for the Wounded.

ALTHOUGH a motorcycle and sidecar is not generally considered suitable for taking out wounded soldiers, it could certainly be the means for giving a great deal of pleasure to convalescent soldiers. The restriction which limits outings for wounded soldiers to a distance of six miles out and six miles home, or 12 miles altogether, has been modified, and the permissible distance is now 20 miles. It is to be hoped that motorcyclists will be willing to come forward to give outings to the wounded. Let us show that motor cycling is not necessarily a selfish pastime, and that all motorists, in fact, can be of the greatest utility to the country.

A number of Midland motorcyclists celebrated the signing of the armistice by a run to Stonebridge.

War Contracts Cancelled.

THE United States Government has already cancelled its munition contracts. Manufacturers of munitions in Great Britain have heard nothing since they were, in most cases, told to go slow.

The New Excuse.

THE old excuse when you wanted information from a manufacturer and he could not reply was to remind you that there was "a war on." We expect the new variation will be "there is a peace on."

What's in a Date?

THE superstitious may see special meaning in the circumstance of the war finishing at the eleventh hour of the eleventh day of the eleventh month. Now, just to complete the circle, could we not have petrol released at the twelfth hour of the twelfth day of the twelfth month?

Plenty of Benzole Soon.

THERE are large stocks of benzole in the country, and our production now amounts to one hundred million gallons per annum. We suggest that this spirit could easily be marketed at 2s. per gallon, including a 6d. tax, when petrol prices would very quickly fall. The cost of petrol at present is 7s. 8d. per tin, plus 2s. super tax.

Petrol—Latest.

WE understand that the petrol position is subject to alterations being made to meet the demands for demobilization. There is no doubt that there are large stocks in this country. A partial release for business and commercial purposes will take place almost at once. A rationed quantity for pleasure motoring will follow, and with it will come the suspension or abolition of the Motor Spirit Restriction Order.

Petrol for Election Day.

IT is announced that the general election will take place on Saturday, 14th December, which, presumably, will be a holiday. A ration of petrol will be issued to candidates and election agents varying from 20 to 42 gallons, according to the area of the constituency. This is an increase by 10 gallons on the amount just announced. In view of the importance of economy, good use ought to be made of heavy sidecar outfits, especially those which can accommodate three people besides the driver.



BENEFITS WE SHALL REAP FROM THE WAR.

Advantages for Both Manufacturer and Rider.

By MAJOR S. R. AXFORD, R.A.F.

THOSE motorcycleists who have lamented the effect of the past four years of war, and D.O.R.A.'S hard restraint on motor cycling should look on the other side of the picture, for there is another side to it, as I shall endeavour to point out. It may be considered that my remarks will prove more interesting to those connected with the manufacture of machines, but I would submit that even if this be so yet it must follow that the rider is vitally interested in what the manufacturer may have to offer him.

In reviewing the effect of the war on motor cycling, it is obvious that the lessons to be gained from aviation are of paramount interest to the motor-cycling industry. In the very early days of air-cooled stationary aero engines much valuable knowledge could have been obtained from a study of leading motor-cycle engines. Now, however, owing to the lightning strides made in aero engine design—due, it should be noted, solely to the "life and death" demand for such advance—we motorcycleists can profitably study the latest developments of aero engines.

Many manufacturers who, in the days of peace, were content to jog along producing anything the public would buy, have been forced in spite of themselves to produce really wonderful engines, simply because the Government's contracts contained clauses which were inexorable in their demands for the best, and the best only. In order that there should be no doubt about it, the Government, at its own expense, experimented with all sorts and conditions of metals, alloys, etc., and when a certain formula was discovered that would satisfy all demands as to fitness for its purpose, this formula was given to the manufacturer with instructions to the effect that metal of this composition only would be used for such and such a purpose—and it did not pay the manufacturer to disagree!

Manufacturers Gain Valuable Data.

Then, again, certain firms possessing genius, designed engines that were simply staggering in their efficiency, but they were not able to enjoy the monopoly of manufacture, simply because they could not produce enough. Therefore designs of these engines were given to other firms with contracts for such and such a quantity. With each contract was a full description of the metals to be used for the various parts, etc., so that these firms enjoyed possession of secrets free of costs that in peace time they would have given their ears for. In similar manner priceless data was obtained regarding cylinder construction, valve-port design, the most suitable metal for

the construction of valves, pistons, etc., lubrication, and what not.

To my knowledge carburation has received a vast amount of deep scientific consideration; the best brains in the industry have wrestled with the complex problem, and simply wonderful results obtained. I may mention in passing what I know of a carburetter that will cause some astonishment when it is put on the market after the war. Already exhaustive trials have been made, and it gives everything from 20 per cent. to 50 per cent. greater economy in petrol consumption than the three leading carburetters on the market at the moment, as well as easy starting, and in fact every desirable feature that should be associated with a carburetter.

The Labour Position.

Most manufacturers of motorcycles have had huge Government contracts for munitions, and have in consequence increased their factories and plant far beyond their wildest dreams of pre-war days, and this extension has not drained their capital; in fact, on the contrary, they have been doing "very nicely thank you." As they have increased their factories and plant so they have increased the number of their employees, and although the majority of these employees are semi-skilled, yet a clever works manager should be able to select a very great number for his peace-time staff, so that the labour question, if handled with foresight and intelligence, should not be too difficult.

The great thing for any firm is to possess a man capable of sensible application of scientific methods of manufacture, together with high organizing abilities. Such men are, unfortunately, rare. For instance, I have watched men in factories doing various types of work, and on several occasions could have pointed out a saving of "shifts" on certain operations. By "shift" is meant the act of moving work into a different position for purpose of accessibility, etc.

It is recognized by all that labour is the most expensive item in the manufacturers' factory costs, therefore any saving in labour, no matter how apparently trivial it may appear in details, is often worth a tremendous amount in a yearly aggregate, both in money saved and augmented output. This question of labour-saving in detail is very seriously studied by our American cousins, and is one of the secrets of their success in huge production and low factory costs. The factory organization of the Ford is the most perfect I know, and those manufacturers who are too proud or indifferent to profit by



In this article Major Axford writes in high praise of the work of the lady Service motorcyclists. Naturally they will not give up the pastime after once sampling its pleasures

Benefits We Shall Reap From the War (contd.).

■ study of this organization will deserve what they will undoubtedly get—"left well behind." I have gone into the question of labour organization fairly deeply, for I feel that this question is the key to success or otherwise. Raw material will be very cheap in a year or two, whereas labour will become increasingly expensive. The reasons for this are so obvious to all who have given any study to domestic economy, that I will not bore the reader by a disquisition on the subject.

Bad Points Must be Eliminated.

Those manufacturers who have supplied motor-cycles for war use have had a unique opportunity for finding out inherent weaknesses in their designs and productions, and if they have not taken full advantage of the lessons so obtained, they will surely rue it. There is one firm I have in mind who will have realized long ago that a certain component of their machine is a failure, yet they have not so far altered it. This may be due to certain terms in their contract with the Government (though I scarcely think so) or more probably to a well-known conservatism which they should discard at once.

Manufacturers who have not had the benefit of Government contracts for their machines need not be behind however, for they would be undeserving of pity if they had not taken advantage of the past four years to design and thoroughly test new features.

So much for the effect of the war on the machines.

The effect of the war on the potential market is, in my opinion, equally if not more far-reaching.

To take the case of the ladies first: Before the war there certainly was a fair market for ladies' machines, but the manufacturers were very half-hearted about it. They could not make up their minds whether open frames were a *sine qua non* or if the fair sex would be happy on the orthodox man's machine. Now, surely, there is no question or doubt.

The ladies have done splendid work as despatch

riders, have done all that man could do in similar circumstances, and have invariably used machines hitherto regarded as designed for men. Mrs. Grundy is now so familiar with the sight of ladies driving such machines that even she will remain coldly silent and forbear to criticise after the war. Manufacturers should need no further hint as to the possibilities of the feminine market except perhaps the fact that an enormous number of ladies are now motorcyclists—and mighty keen they are too.

Old Riders More Keen Than Ever.

The number of male riders must be tremendous, as it can be safely assumed that all old riders (excepting those who, alas, have made the supreme sacrifice) will be only too keen to be on the open road again. Add to these the number of despatch riders who have been introduced to motor cycling since the war, and also the thousands of young fellows "out there" who have seen and admired these despatch riders, and who have been fired with an ambition to do likewise, and we get a very healthy market to cater for. In addition it must not be overlooked that the war has been the cause of many who otherwise would have driven cars to seek something more economical, and the outstanding economy of the sidecar outfit will not quickly be lost sight of when peace conditions, with their imperative need for economy, are with us.

From the foregoing it will be seen that very real benefits will accrue to the motor-cycling industry and pastime through the war, which, although they can, of course, never repay the awful havoc wrought, will nevertheless offer some slight recompense. For the sake of the British manufacturer, let us hope that he will take full advantage of these wonderful lessons, for there are others who will claim the market here if there is half a chance, and although no doubt the average Britisher is thoroughly patriotic, he is not to be entirely blamed if he insists on obtaining the best possible value for his money.

Outings for the Wounded.

IT is to be hoped that the practice of giving outings to wounded soldiers will become even more extensive now that the permitted mileage has been increased from 12 to 20 miles. While on this point the opportunity is taken to give credit to the Harley-Davidson Motor Co., whose efforts in this direction throughout the war have been most praiseworthy. From time to time we have chronicled the holding of most successful trips, prominent amongst these being that devoted to the entertainment of the wounded heroes of the Jutland Battle. Refreshments and cigarettes have always been supplied with a lavish hand and the comfort and happiness of the men studied in every way. Mr. Duncan Watson and his assistants at Newman Street have in fact reduced the entertaining of the wounded to a fine art and have done much to remove the stigma often applied to motor cycling by the uninitiated of being a selfish pastime.

Crippled Motorcyclist Completes Long Tour.

ALFRED LEROY, a legless and one-armed motorcyclist who drives a Harley-Davidson sidecar combination, with controls especially built to meet the requirements of his disability, has arrived home after a round trip tour of the American Continent. Mr. Leroy left Los Angeles four months ago and toured northward along the Pacific Coast to Portland and Seattle. From Seattle he drove over the Rocky Mountains to Minneapolis, thence south to Chicago and east to New York. After a visit of several weeks with relatives in the eastern metropolis he began his journey westward again, travelling by way of Buffalo, Cleveland, Chicago, and Santa Fe. In the entire trip of 10,000 miles no mechanical trouble beyond minor repairs and adjustments was experienced.

Death of Aubrey Bashall.

IT is with the deepest regret that we hear at the moment of going to press of the death of Aubrey Bashall, after an illness patiently borne which extended over four years. We understand that he never properly recovered from a chill contracted in the London-Exeter run on Boxing Day, 1913. He was only 23 years of age. The sympathies of all sporting motorcyclists, amongst whom he was such a prominent figure, will be extended to his family in their bereavement. His brothers Harry and "Bizzy" have been in France since December, 1914, but their return in time for the funeral to-day (Tuesday) is hoped for.

"Victory" Competition.

IN addition to the ordinary contributors' rates we are offering three bonuses of £2 10s., £1 10s. and £1 respectively for articles selected as being the best of those submitted and appearing in *MOTOR CYCLING* up to and including the issue of 10th December. These articles should preferably be of topical interest and suitable for illustration. Contributions must be clearly marked "Victory Article" on the MS. and addressed to the Editor, *MOTOR CYCLING*, 7-15, Rosebery Avenue, L.C. 1.

Ten-shilling Note Competition.

A *MOTOR CYCLING* 10s. note (franking the purchase of goods to this amount from any advertiser in our pages) will be awarded to the senders of the best designs for a touring handlebar. Brief descriptions should accompany the attempts. The points to bear in mind are comfort in position, ease and neatness of housing controls, easy attachment of accessories, etc. The closing date will be 3rd December. Attempts should be addressed to the Editor, *MOTOR CYCLING*, 7-15, Rosebery Avenue, London, E.C. 1.

THE INADEQUACY OF MODERN MUDGUARDS.

Their Failings Featured and Improvements Visualized.

MANIFESTLY motorcycle mudguards must either be improved or the title altered to one more in keeping with their proclivities. In the writer's opinion it is very injudicious to allow this question of adequate mudguarding to enjoy comparative quiescence until riding recommences, and he further ventures to state that it is the policy of looking upon the mudguarding question as a seasonal one, which largely accounts for the paucity of improvement in mudguard design; because it is quite obvious that by the time the annual agitation is well begun, the need for its recognition by the manufacturer is

the air current. If the rider be only travelling at legal limit speed and meeting a 10 m.p.h. breeze—to quote about an average of usual riding conditions—the air entering the mudguard will be at the rate of 30 m.p.h. The guard being concave at its rearmost part tends to hold the air (as shown in Figs. 1 and 2) against the latter's natural inclination to escape. Therefore, the air cannot find an exit at first (except as given below) owing to the constantly oncoming current preventing egress by the most easily available outlet, i.e., over the edge of the mudguard. The only other exit for the air, referred to above, is via the bottom of the guard, but the revolving tyre, with the air friction incidental thereto, makes this exit one of questionable importance. Eventually, how-

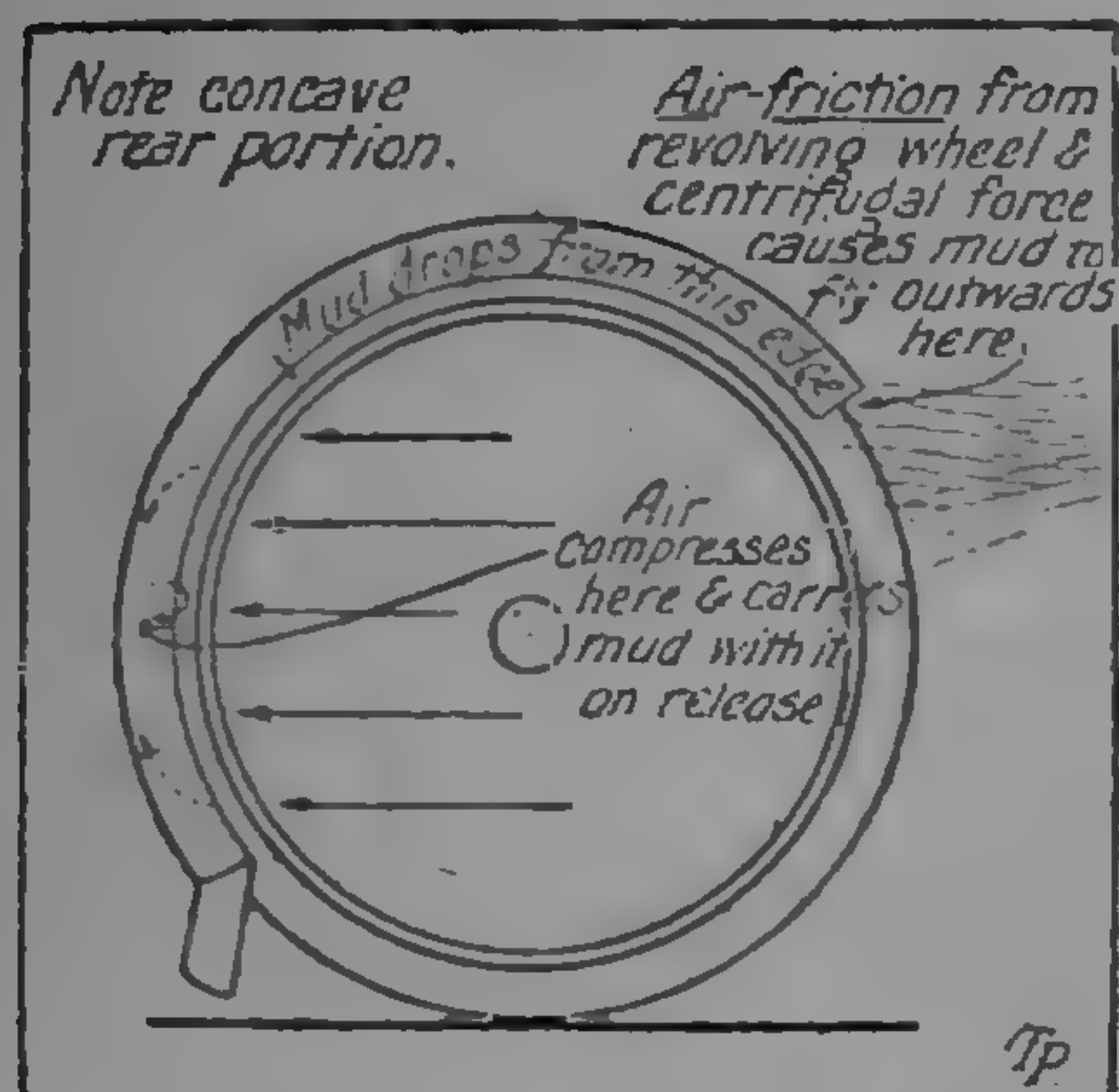


Fig. 1.
Orthodox
front wheel
guard, showing
how the wet
mud escapes.

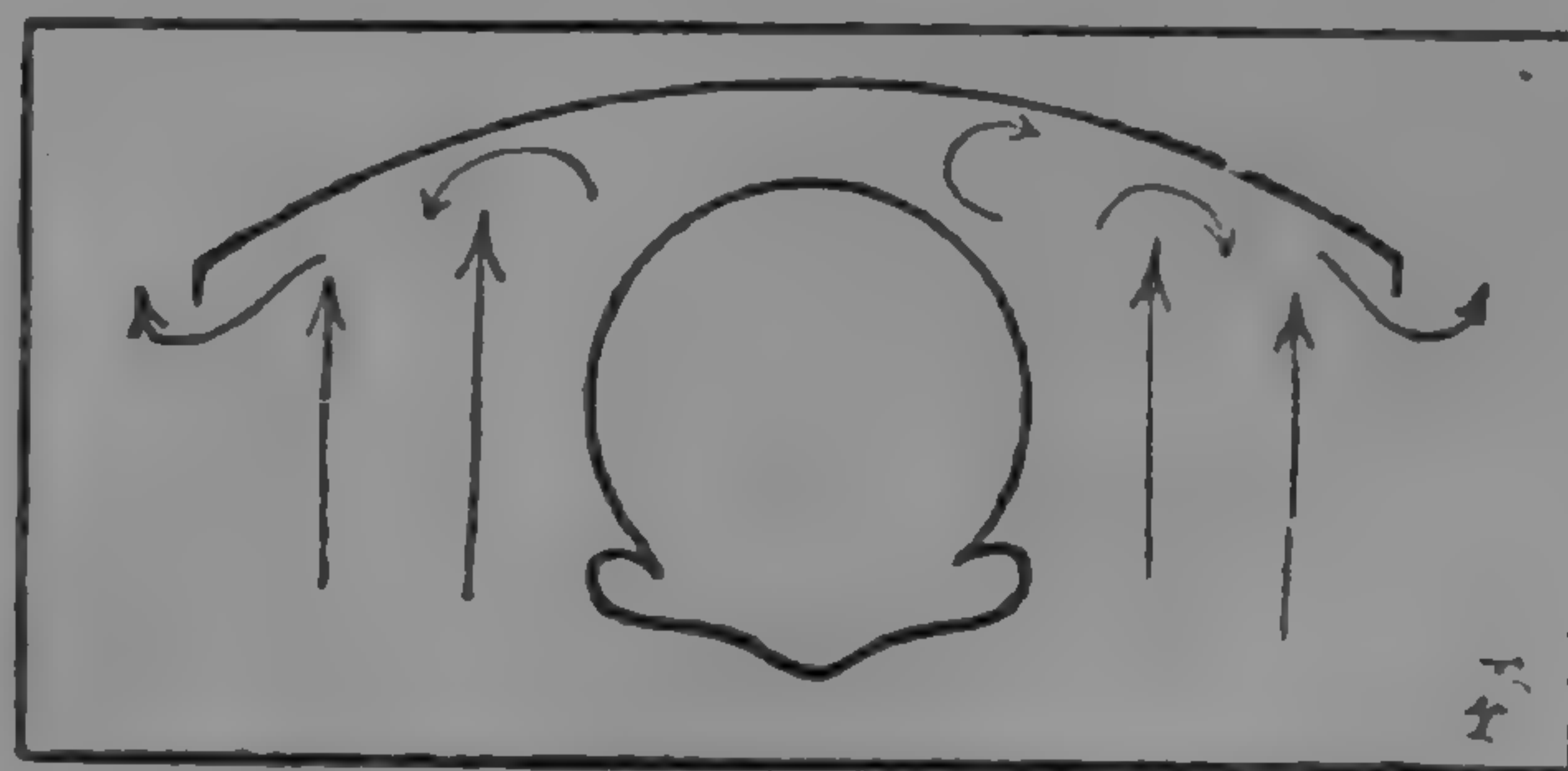


Fig. 3. Section of wide guard.

rapidly vanishing. Hence the usual apathy, resulting in the annoying repetition of "status quo" on this question.

This article is intended as an attempt to stimulate the propagation of practical ideas towards the solution of the very thorny problem. With this very desirable end in view, it is primarily essential that an attempt be made to outline the conditions which make the fitting of mudguards apparent. The elementary fact of the deposition of road filth on the mudguard by the rapidly revolving tyre need not be laboured beyond the bare mention; but the reasons why the mud does not remain in the receptacle expressly provided for it, but persistently and surreptitiously escapes, to the detriment of the rider, is a problem which can only be elucidated by perseverance. The writer has spent much time in investigating many of the existing theories anent the cause of the effect so patently demonstrated by any bad-weather rider. The logical conclusion arrived at may be judged from the suggestions herein.

Fig. 1 shows a side elevation of a conventional mudguard, in situ with the wheel outline; the arrows in this and the other sketches—excepting where otherwise specifically mentioned—indicate the direction of

ever, as the machine's road speed increases, the air becomes compressed within the mudguard, and it is then able to overcome the pressure of the air entering the guard and escapes over the edge, as at the half-dotted and half-full line arrow in Fig. 1. An inevitable corollary of this is, that the lighter filth near the edge of the guard is continually being blown out by the escaping compressed air. Other equally important prevailing conditions are graphically shown in Fig. 1.

Having arrived thus far it will be fairly clear that wide guards cannot effect a cure; a conclusion which obviously many riders using them have come to. What, then, is the solution? Surely the obvious one is, firstly, to either release or obviate the pressure of air in the mudguard; and, secondly, to eliminate the other undesirable features depicted in the first illustration.

In this connection the brief outlining of a successful experiment carried out by the writer may serve to

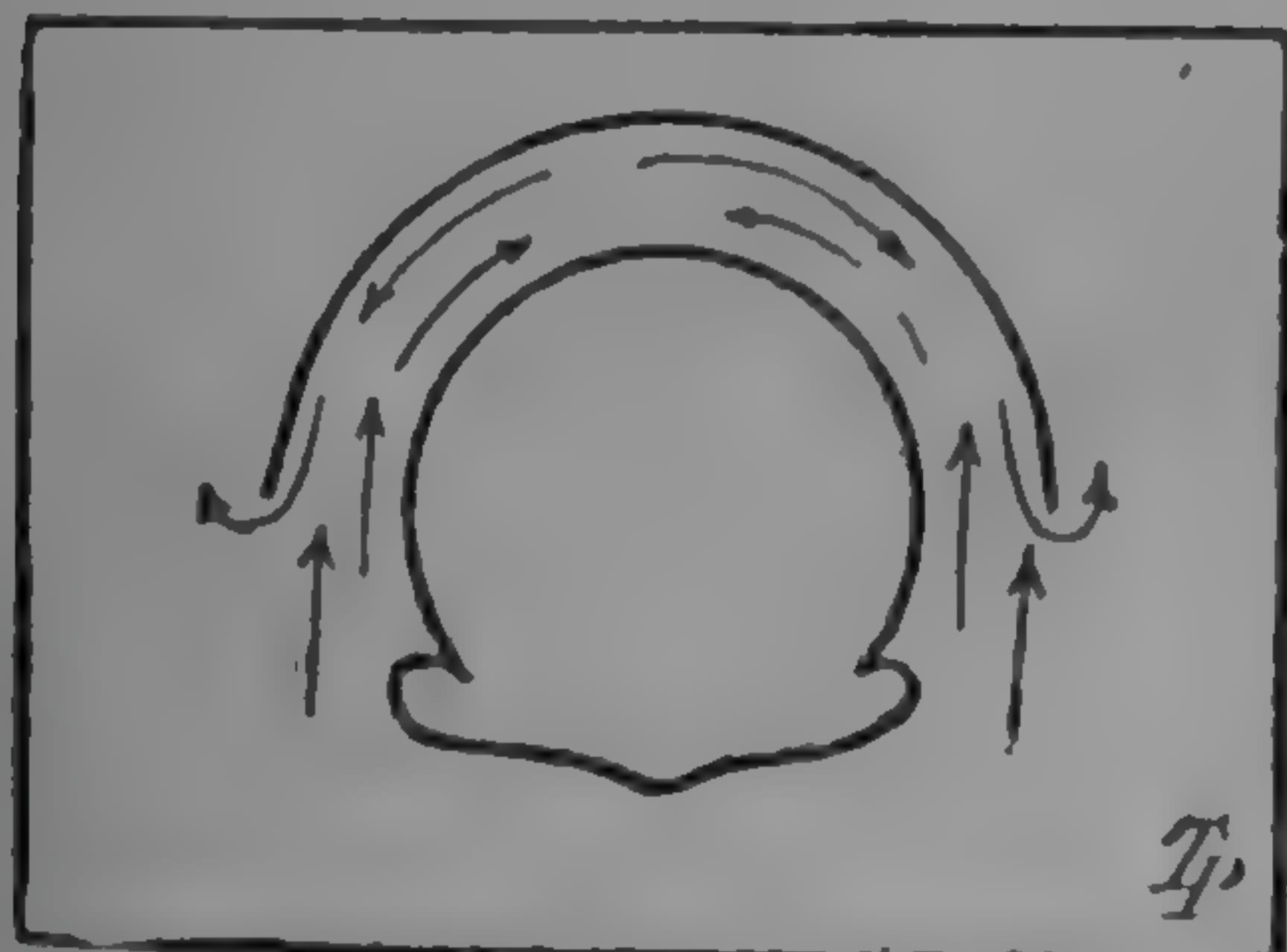


Fig. 2.
Section of
orthodox
guard. The
mud is blown
round the
edges.

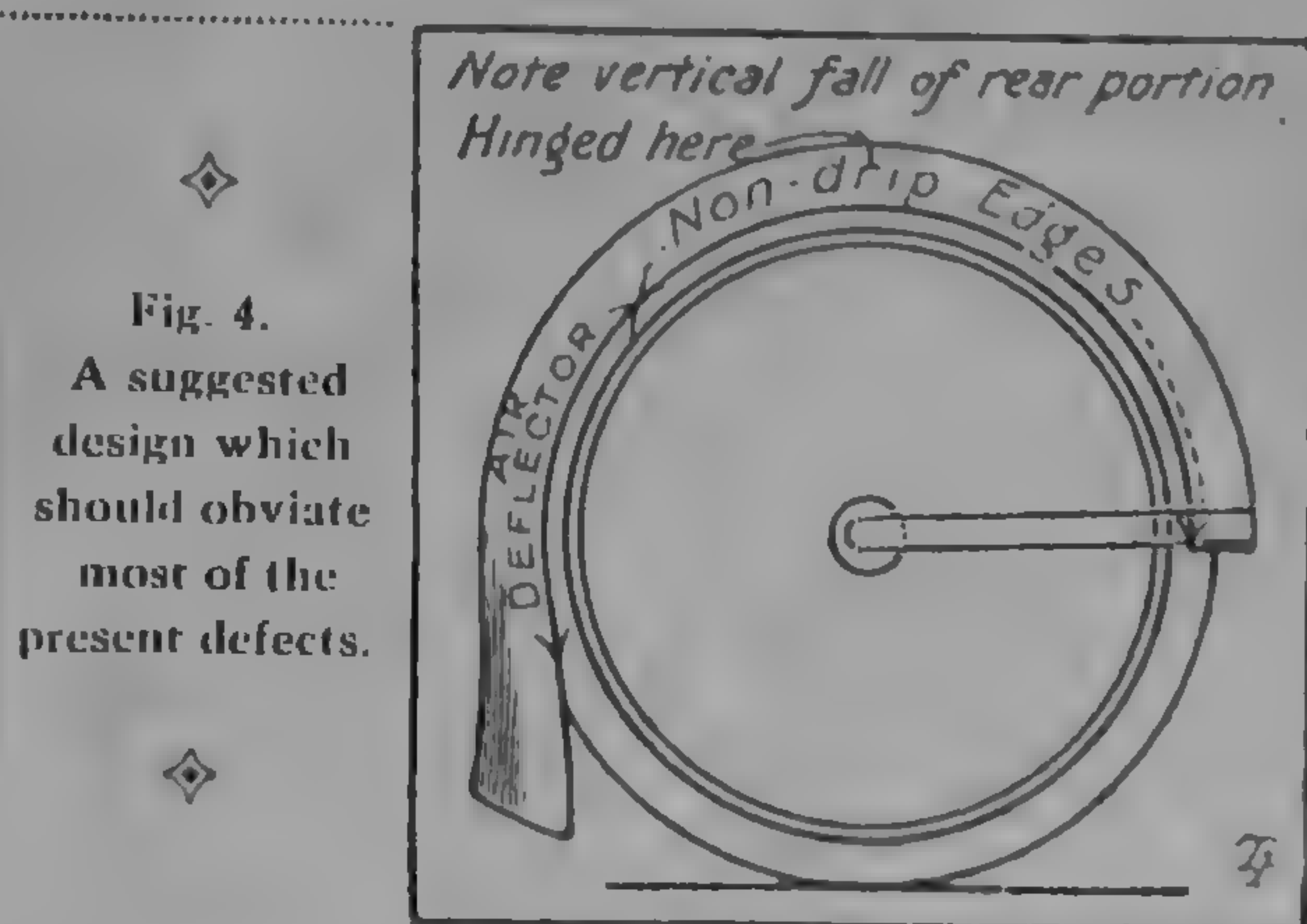


Fig. 4.
A suggested
design which
should obviate
most of the
present defects.

The Inadequacy of Modern Mudguards (contd.).

save him from the reproach of only theorizing. The front wheel of a Harley-Davidson was covered in, as shown by the shaded portion of Fig. 7. This was achieved by means of an oval household tray, cut down the middle lengthwise, and one half fixed at each side of the wheel to supplement the original guard, the extra length due to ovalness being useful for attachment purposes. The front extension was covered in with canvas, and the whole enamelled Harley grey. Two metal channels were fixed on the inside of each supplementary guard, as shown dotted in Fig. 7. These diverted the stream of mud to the back and front extremities of the wheel, whence it had a clear drop to the ground without contaminating the machine. The greater volume of mud due to its concentration ensured a quick drop. As previously remarked, this proved highly satisfactory (except in high winds). Working on these lines, the following

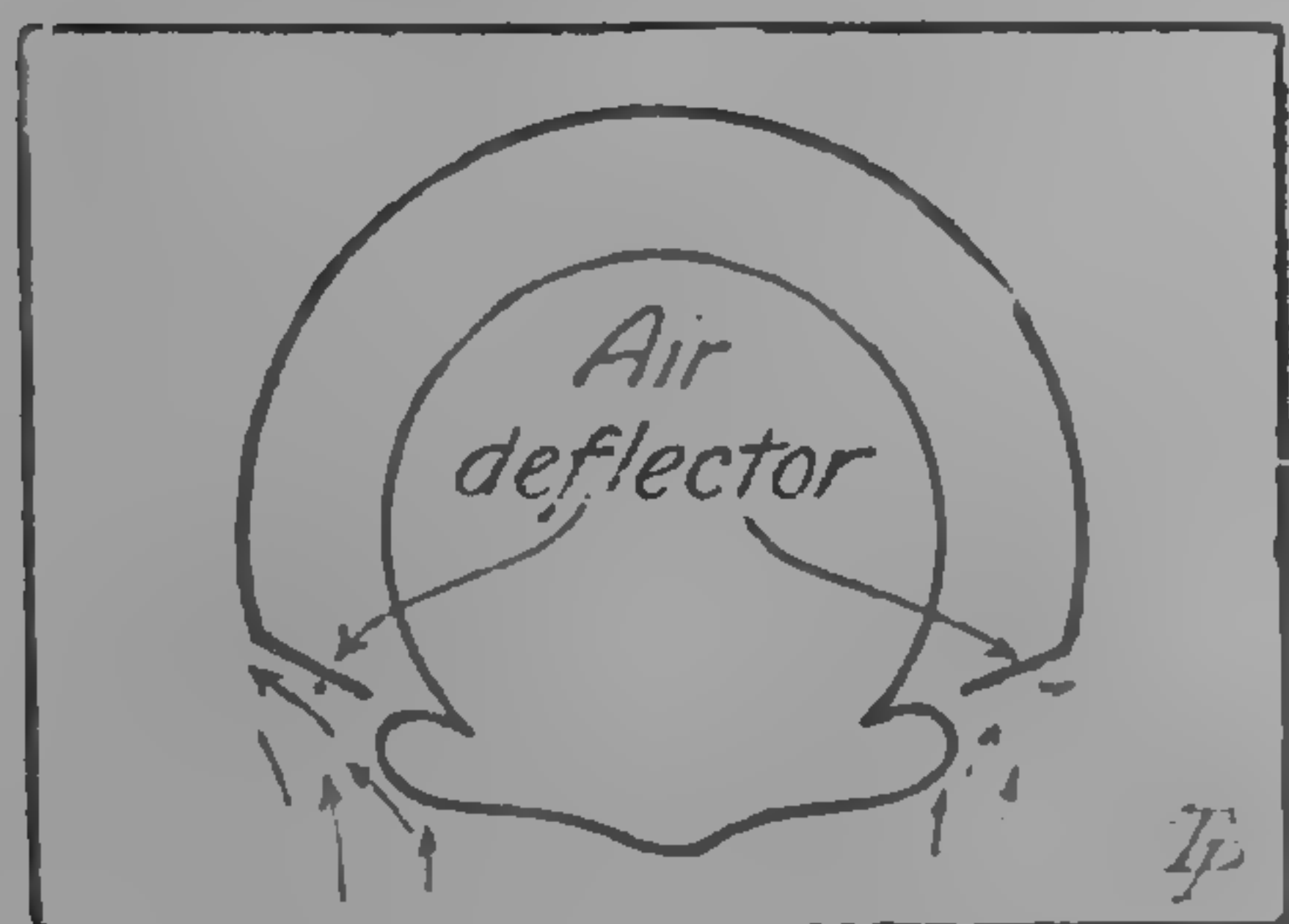


Fig. 5
Section of
suggested
front guard,
showing air
deflectors.

is suggested as a basis on which a mudguard might be made with the object of eliminating the prime bugbear of motorcycling.

For the front wheel, a guard somewhat after the outline (side elevation) of the American Excelsior, Fig. 4, would be used, the front of it being extended to half-way down the front tyre. This would be hinged at the top to facilitate wheel removal. A slight overlap would effectively seal the join. The hinged front section would be held rigid in use by means of a flat steel stay attached to its extremity, and anchored to the wheel spindle on either side of the wheel. Non-drip channel edges, as at Fig. 6, would be fitted, being turned inwards at the front so as to discharge the contents of the channels on to the front tyre, whence it would be returned to the road (Fig. 8). This should effectively check the mud which, on the conventional type, is continually dropping from the top edges of the front guard to be caught on the rider's person before it can reach the ground.

The rear extremity of the non-drip channels would discharge into the main body of the guard. At the point where the non-drip channels ended (near the rear member of front fork assembly) a flat extension to the mudguard edge, turned inwards towards the rim, as in Fig. 5 could be fitted. This would act as an air deflector (see Fig. 5) and prevent the ingress of air to

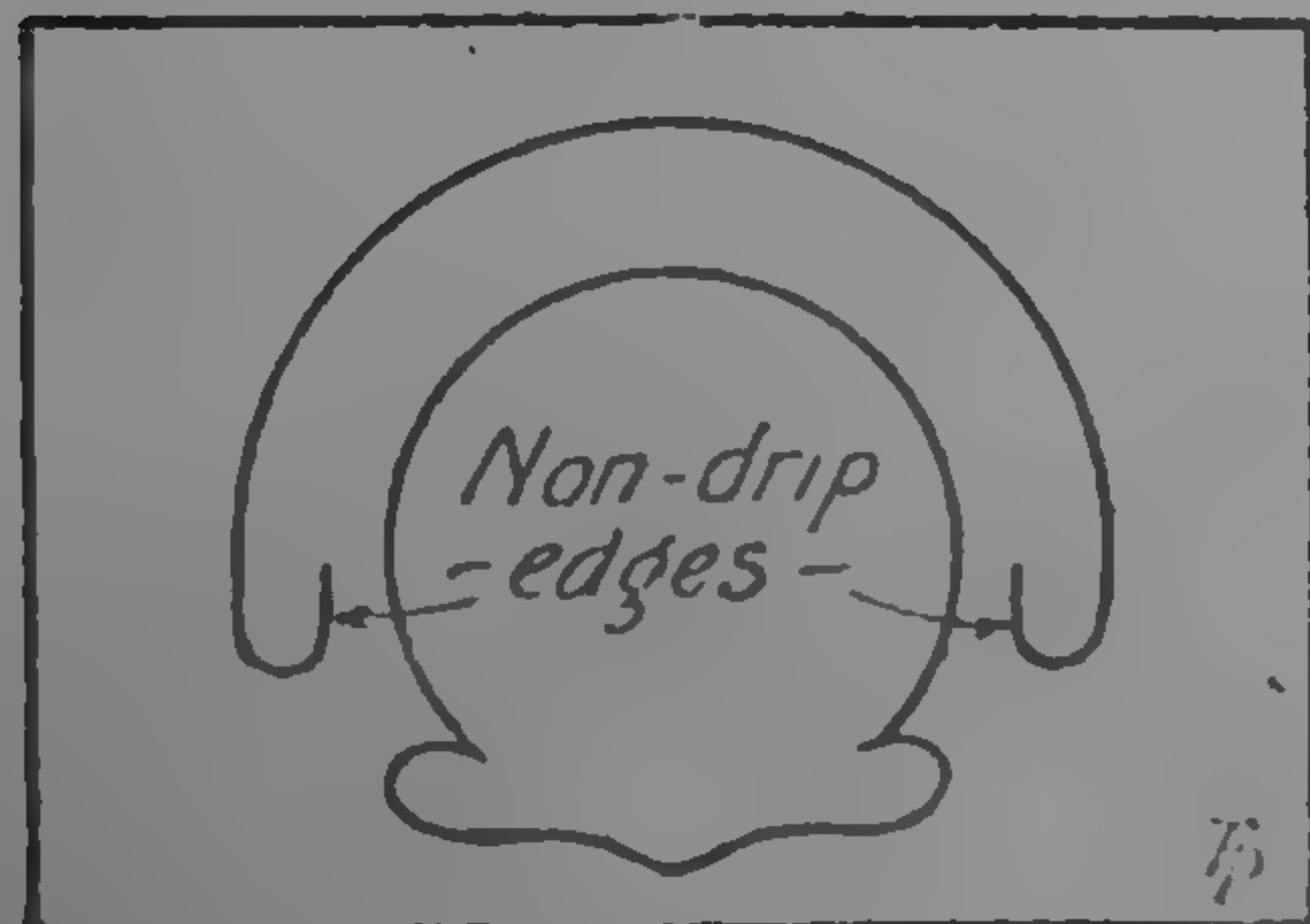


Fig. 6
Section of
suggested
rear guard.

the concave body of the guard. Thus, in conjunction with the non-drip channel edges it should entirely eliminate blown-back spray from the front wheel, which is admittedly the greater sinner of the two.

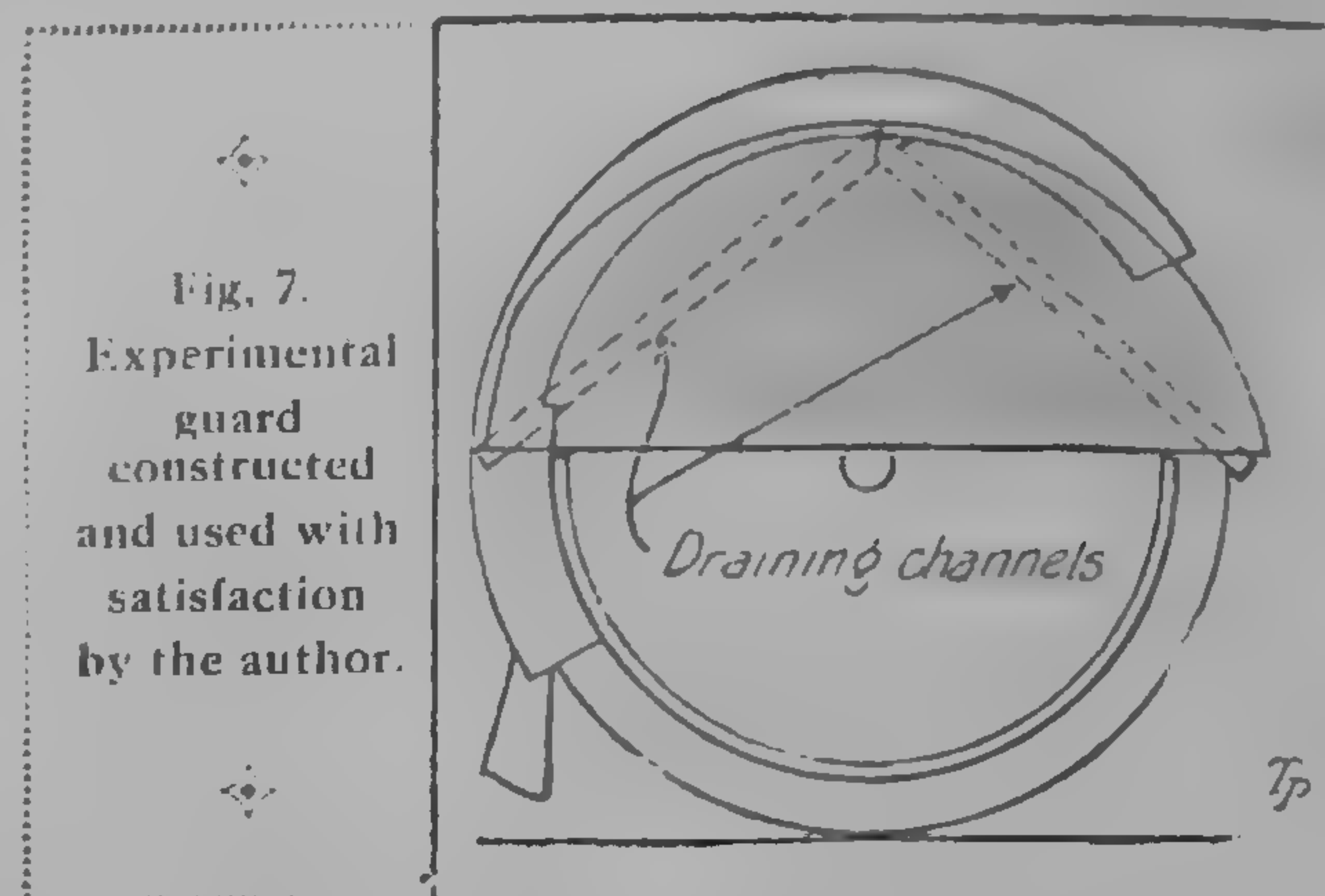


Fig. 7.
Experimental
guard
constructed
and used with
satisfaction
by the author.

Furthermore, the obviating of the air-retaining concave portion by shaping the back of front guard as at Fig. 4 (which should be compared with Fig. 1) would effectively release any air escaping past the deflector. If ample clearance were given no fear of clogging need be entertained. Of course, for Colonial use and farm work at home, this type might be unsuitable; but for the average solo town rider, and tourist combination on average roads, it should be eminently satisfactory.

The back wheel would be fitted with the usual type of guard, but supplemented with adequate channels on the entire length (see Fig. 6). This slight improvement to the rear guard would be highly appreciated by the generality of riders, whose transmissions invariably suffer detriment from the mud dropping from the edges of the rear mudguard when the roads are a-swirl.

In these days of pressed steel and scientific welding, arguments against suitable designs on the score of manufacturing difficulties fall very flat indeed, and

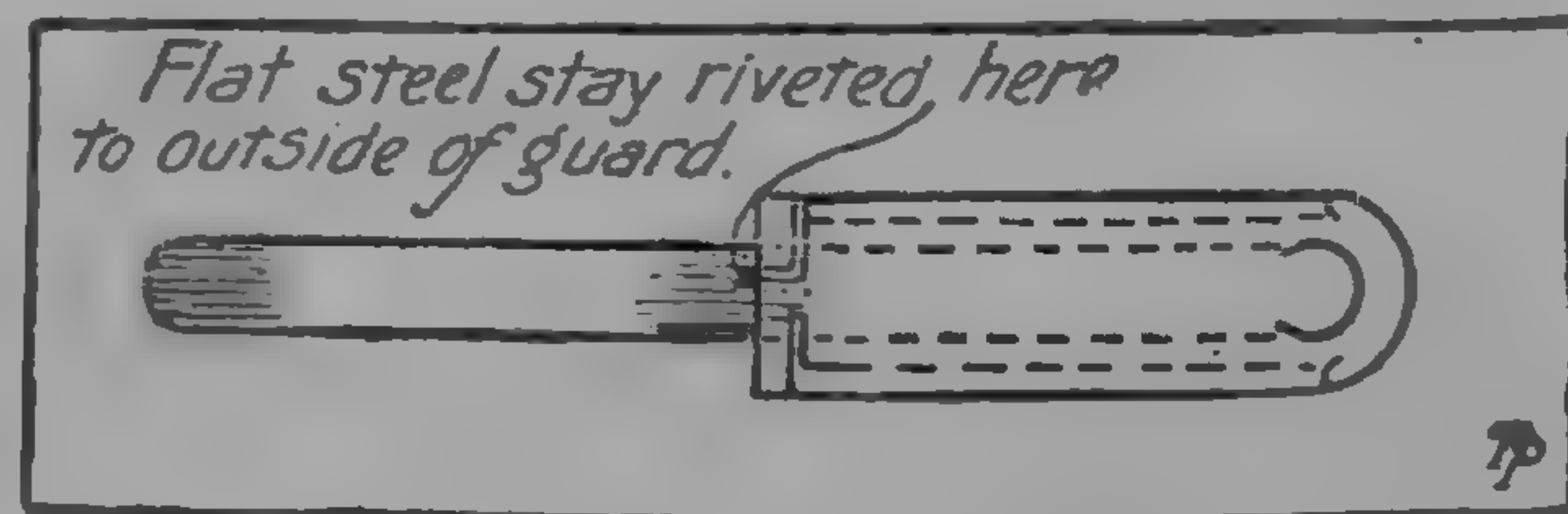


Fig. 8.—Sectional front view, showing front non-drip edges turned inwards to discharge mud on front tyre

remind one of a quotation seen in the daily Press recently, to the effect that, things move so quickly nowadays that people who protest certain things impossible, are immediately elbowed out of the way by those actually doing them. In other words "Get on, or get out." Of such may the kingdom of motor-cycle manufacturers be in the near future!

In addition to the already outlined advantages, the type suggested would do away with the difficulties encountered when attempting to make wide guards easily detachable. The air resistance would be lower than any existing mudguard, a fact of considerable importance when the fates decree that a stiff gradient, a heavy road, and a head wind should synchronize.

The suggestions embodied herein are not offered in any dogmatic spirit, but rather, as previously stated, in the hope of stimulating further contributions with the object of evolving the best possible system of countering the annual mud offensive.

J.W.

The Relation of Piston Speed to Efficiency.

The Effect of Lengthening the Stroke.

EARLIER in the history of the petrol engine the question of ratios of bore to stroke was not so much debated, and engines of equal bore and stroke were quite common, as were those in which longer stroke predominated. Later the "square" engine became more common, and has kept the lead up to the present time. Many and heated have been the arguments, for and against, that have crowded our technical journals on this subject time and again. It is, therefore, not the purpose of the writer to re-open a fruitless argument, but merely to present some considerations strongly affecting the principles of design from a view-point which he believes to be not heretofore touched upon.

Theory teaches us that rotative and piston speeds are limited by the strength of the materials employed, while practice shows us that they are limited by other

If we examine the following table we shall appreciate the proportions of the sizes and speeds perhaps more clearly.

Change of Piston Speed with Variation of Stroke-bore Ratio.

Stroke-bore Ratio.	Piston Speed at Max. b.h.p.
1.00 to 1.08	1240 ft. per min.
1.10 to 1.20	1303 "
1.21 to 1.30	1385 "
1.33 to 1.44	1414 "
1.50 to 1.61	1597 "

(These are the I.A.E. figures.)

The writer believes he is correct in stating that there is no method given in any text book of making an accurate and scientific comparison of piston speeds, and yet there is no reason why there should



*

Celebrating the announcement of the conclusion of the armistice. A load of six or more up on Government motorcycles was a common sight in the West End; whilst, in a fit of exuberance, the crowd added one machine to a bonfire in Trafalgar Square.

*

considerations also, such as piston and valve cooling, lubrication, etc., and that these latter limits are well within the bounds set by the material strength. Practice also shows that considerations of noise, vibration and life of the motor have limited the maximum rotative speeds for use in the light petrol engine still further, to a figure considerably under that reached successfully by engines of various strokes and bores in many racing machines. To-day, the average practical maximum number of revolutions varies perhaps from 1600 to 2000 according to the size of the engine.

At one time, and not so long ago, it was the writer's belief that the long-stroke engine could not be run at as high a rotative speed as the short-stroke engine, and this, I think, has been the general opinion among motorcyclists as a whole. On going into the matter closely, however, the writer has been unable to find any practical or scientific facts supporting this view, and will, therefore, attempt to explain the reasons which appear conclusive why long-stroke engines may, and can with advantage, be run as fast rotatively as short-stroke engines of an equal displacement.

be no such method, inasmuch as there are no unknown elements to be considered.

In order to discuss more clearly this and other questions pertaining to the subject, let us compare two engines of equal displacement having different bore-stroke ratio, say:—(1) 80 × 80 mm., (2) 70 × 96.6 mm., assuming an equal rotary speed for both. We can then arrive at a correct comparison as regards vibration, noise, power, life, control, weight, cost and cooling. The engines, having the same displacement, are practically the same weight. The crankpins, bearings, etc., can undoubtedly be made of correct size and strength; therefore, unless we find a wide divergence in the forces set up by inertia of the moving parts, we will not find a strong reason why one engine can be run faster rotatively than the other.

Vibration is caused by varying torque, noticeable almost entirely at low speeds; lack of running balance of rotating parts, the effects of which increase rapidly with the speed, and which are, on the average, a very noticeable form of vibration: the unbalanced inertia of the pistons due to the angularity of the connecting

The Relation of Piston Speed to Efficiency (contd.).

rods; and other vibrations due to the lack of rigidity in the crankpins, etc. This latter vibration due to the angularity of the connecting rods is the only one having special relation to piston speed, and in high-class engines is the one most apparent. As it increases according to the square of the speed, it is most noticeable at high speed. The formula $F = .00017N^2WS$ represents the force set up by inertia in the cylinder, as N (R.P.M.) is equal in both engines, the comparative vibration due to the above mentioned cause will be proportionate to WS or the stroke \times the weight of the piston, gudgeon pin and upper half of the connecting rod. So the engine in which NS is the smallest quantity will have the least vibration.

Naturally proper comparison of weights involves similarity in design and purpose.

Theoretically, pistons should weigh according to the cube of the bore, and would do so if made of steel and machined inside and out. Practically using cast-iron pistons, the larger would be a little lighter than the proportional figures. The cubes of the bores of these two engines are as 67 to 100 approximately, and the practical weights of the pistons 1.5 lb. and 2.2 lb. for the long and short strokes respectively, which are to each other as 68 to 100. It, therefore, seems that 1.5 lb. and 2.2 lb. are substantially correct proportional weights. The short stroke connecting rod 7 ins. long weighs on the gudgeon pin end .71 lb., and the long stroke rod 8.46 ins. long weighs .87 lb. Therefore:

$$\begin{aligned} W &= 2.2 + .7 = 2.9 \\ W^1 &= 1.5 + .87 = 2.37 \\ WS &= 2.9 \times 3.2 = 9.28 \\ W^1S^1 &= 2.37 \times 3.865 = 9.16 \end{aligned}$$

These figures are so much alike that we must assume the vibration in the two engines to be the same, and there is no basis for the belief that the long-stroke engine is a slow speed engine on this account.

Now, is there any reason to be found why the long-stroke engine cannot be run so fast as the short-stroke? About the only other point to be considered in this connection is the friction between the piston and the cylinder. This is a function of the pressure and the stroke by the co-efficient of friction, which gives the same result in both. Thus we have two machines in which the inertia of the moving parts sets up strains and vibrations of the same intensity and duration, and which are resisted and absorbed by structures of equal weight and strength, and in which the friction caused by such movement is the same.

The question of relative proper speeds is very important. If it were conceded that of necessity either style of engine is essentially a slow-speed engine and could not be run so fast as the other, this in itself would show immediately an advantage of the one of higher speed capabilities; it would not show in any way that the high-speed motor was not just as good at low speed work.

If we take the ordinary view of the question that the long-stroke engine must of necessity run more slowly, then to demonstrate its superiority it must be first shown that the slower speed is more desirable, and next that at equal speeds it is a better engine. Further, unless it be conceded that the long-stroke motor has equal rotative speed capacity, it follows that lighter, cheaper, and more powerful engines can be built with the short stroke.

Regarding noise, which is to-day, perhaps, the most important question relating to an engine, we note that both engines have the same rotative speed and the same displacement; therefore, they must have the same size and lift of valves and cams. Thus the only point of difference relating to noise will be the greater weight of the moving parts of the valve mechanism in the long-stroke engine, due to the greater distance from the valve seat to the cam; the difference is unavoidable, though small, and might amount to 10 per cent.

(To be concluded.)



A D.R. in the midst of the hills of Samaria.—Official photograph.



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Some Further Sidecar Body Suggestions.

Two More of the Designs Submitted for Our Recent Competition.

1.—A Light Double-seated Sidecar Body.

THE working drawing reproduced on this page shows a sidecar body designed and already constructed, the result of much experience of the shortcomings of the orthodox type.

In the first place, while it is designed to seat an adult and child, as a matter of fact it will take two adults quite comfortably. The second consideration, and from my point of view the chief one, is luggage accommodation. Under both seats and in the bulbous back there is room for enough luggage for three persons as well as tools and a two-gallon can of petrol. The third consideration is wind resistance; the whole body is streamline, and together with the windscreen, which is curved, reduces wind resistance to a minimum. Lastly comes the question of weight: this has been kept extremely low as the following constructional details will show:—

The body has been mounted on a heavy double bar dropped chassis and fitted to a $3\frac{1}{2}$ h.p. Premier, and with three up always and, in the majority of cases, carrying luggage, my petrol consumption for the whole year ended 1917 was 69.9 miles per gallon. I think this speaks for itself.

Now with regard to the construction: A framework of $\frac{3}{4}$ in. square bent ash was built up, as shown in the photograph, all joints being half-lapped, screwed and glued. The back corner posts are each made from two pieces of bent ash (see full size section on drawing), glued and screwed together and then rounded off to $2\frac{1}{2}$ in. radius. Special care was given to the members supporting the floor, which was cut from $\frac{3}{4}$ in. three-ply birch. The whole weight of pas-



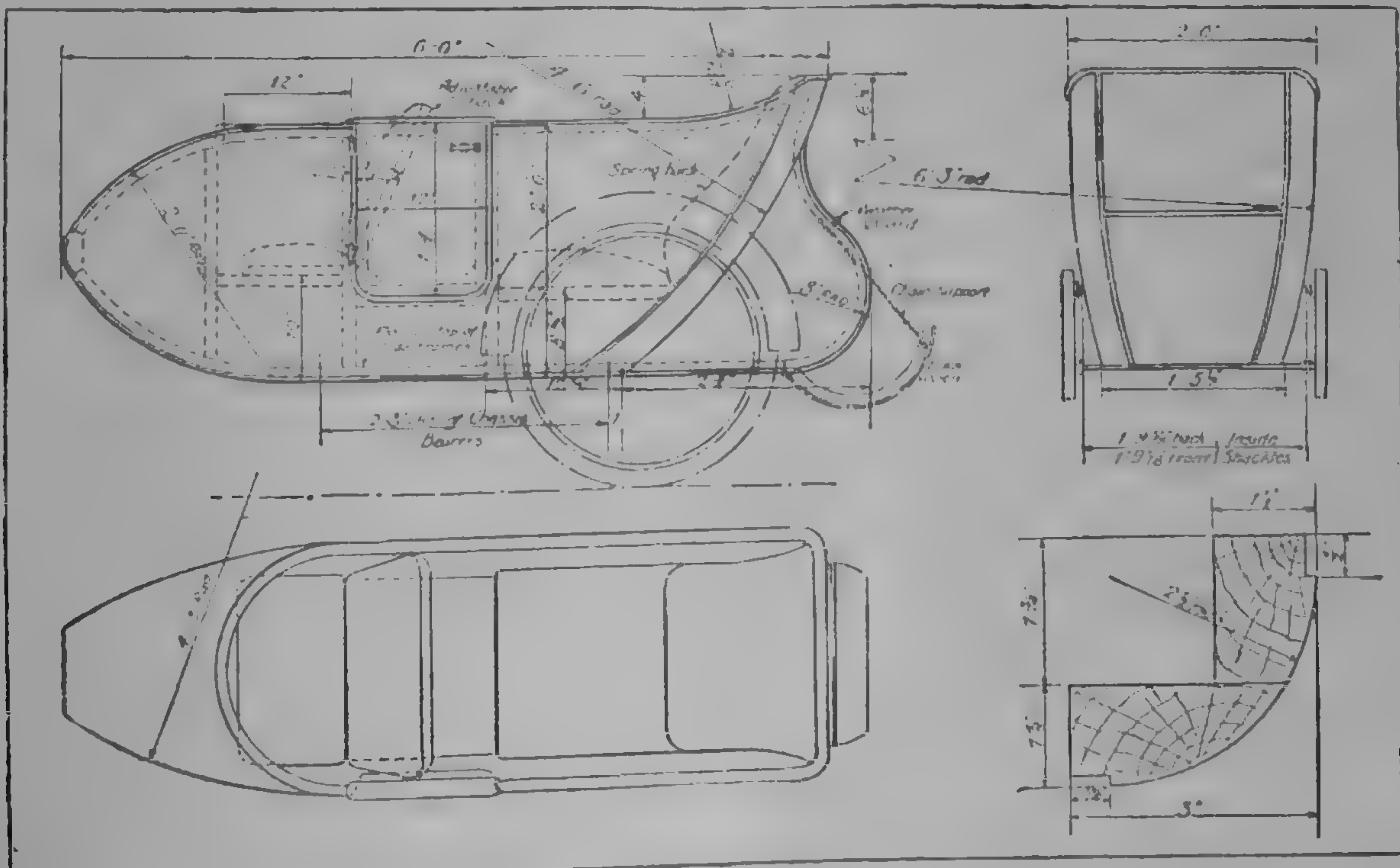
The main frame before being panelled.

sengers, etc., is carried by the framework and no stresses whatever are thrown on the outside covering.

No. 4 three-ply birch was used for the covering and was glued and screwed into position, all joins and edges being finished with $\frac{3}{8}$ in. half-round cane beading, glued and pinned on. The outside and inside were then given two coats of priming and outside three more coats of biscuit-colour coach paint with two coats of varnish, each coat being rubbed down with pumice powder. The beading was finished in dark brown. The inside was upholstered in dark brown Rexine, with pockets in the door and on the opposite side.

The main seat, which lifts off and back, is sprung, and, together with the sides, is padded with pure wool. The front seat is made to lift out and is fixed in position with two brass blind bolts. The back is also fixed to the seat in the same manner and made adjustable by means of notched side bars engaging in dowel pins screwed into the framework.

A torpedo gas lamp was fitted to the bracket fixed on left-hand side and the pipe lead taken through the body. A $\frac{1}{16}$ in. thick celluloid windscreen in bent wood frame was fitted to the front of the body. The top of the door was finished with a mahogany slat, and the whole gives rather a smart appearance.



The dimensioned drawings of the design described above.

Sidecar Body Designs (contd.).

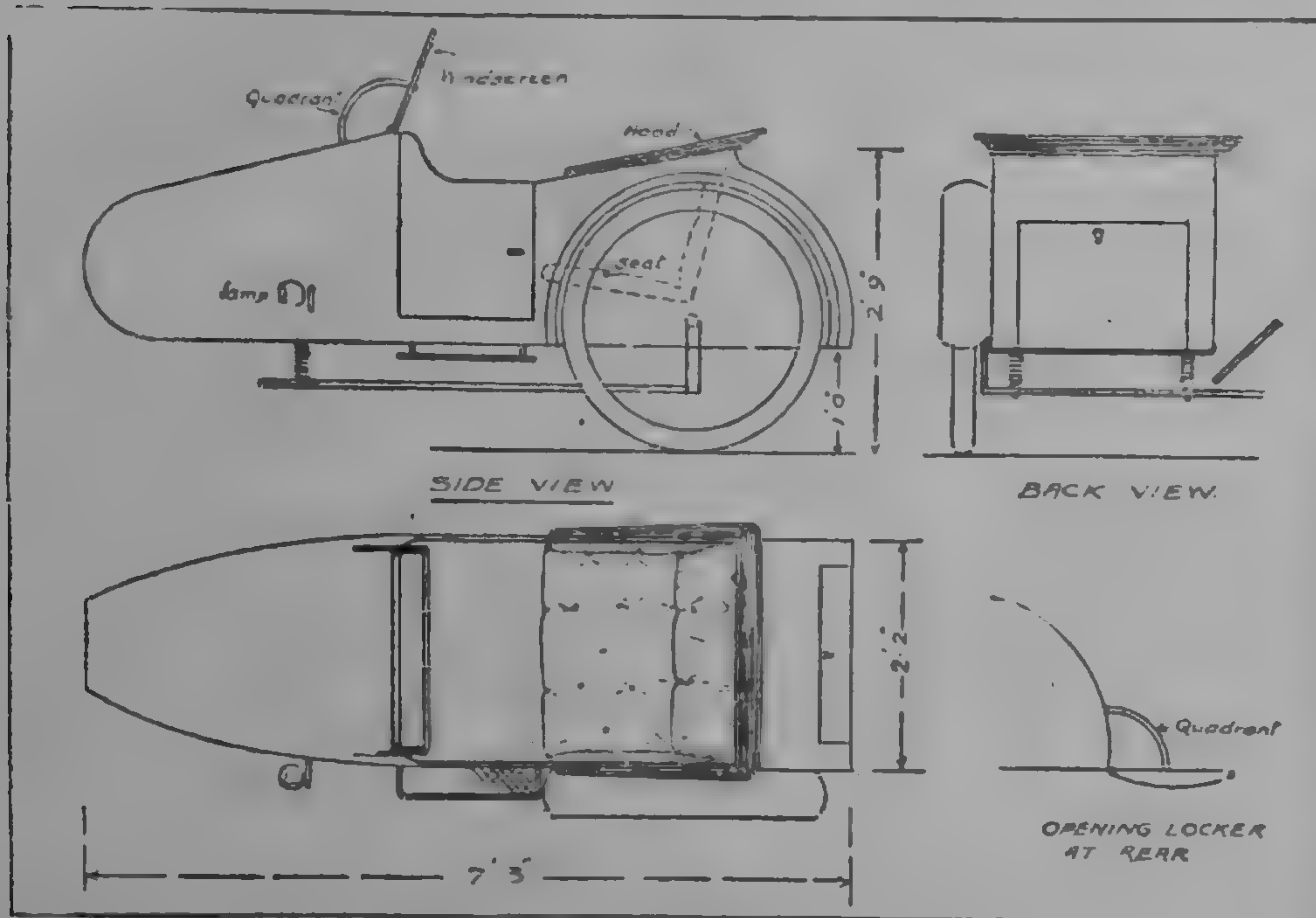
There is one little point in connection with the door which adds to the comfort of the passengers—a point which is usually overlooked in everyday sidecar construction. That is a draught-proof rabbet made all round the door, and not down one side only, which is, I believe, the usual method. The bulbous back is fitted with a curved door opening outwards and fastened with a spring catch which also locks, and when open is held in place by a safety chain. I have

found from experience that it is advisable to have all tools, etc., under lock and key, and therefore the seat as well is made to lock in position.

With regard to the cost: The whole of material, including the wind screen, cost £3 15s. (war-time prices), and I spent altogether some 91 hours on the job. Thus, at 1s. 6d. per hour, labour would work out at £6 16s. 6d., giving a total of £10 11s. 6d. I should say that if the construction was put on a commercial basis this cost could be reduced by at least 40 per cent.

M.W.T.

II.—With Hood, Windscreen and Ample Storage Space.



Description.

Coach-built body. Colour suggested: grey, picked out in black.

Mudguard mounted on sidecar body.

Seat and sides to same upholstered.

Locker at back as shown, with space right through under seat for storing golf sticks, fishing rods, etc.

Windscreen as shown. Hood to fold over to join windscreen, with side extension pieces, and to fasten down neatly when not in use.

(Design by J.B.J.)

WHY NOT CAR SYSTEM OF CONTROL?

ONE of the features which should be altered in peace time motorcycle design is the control system, which at present is crude, and very little different from that employed on the earliest machines.

The method of engine control outlined below, follows in principle the car system, viz., dual control by hand throttle and accelerator. On a motorcycle a right-hand Bowden lever would take the place of the car hand-throttle, whilst the accelerator of motorcar practice would be represented by a twist-grip on the left side of the motorcycle handlebar, and also acting through a Bowden cable. The air and ignition controls would be of the orthodox type, although it would be an advantage to have an entirely automatic carburetter, thus eliminating the complication of the extra air lever.

To operate this system, the Bowden throttle lever should be set at a good slow-running position, and all further driving done on the "accelerator," which, I think, is the method used by most car drivers. Thus, when the engine is declutched, there would be no need to "feel" for a slow-running position, it being possible to shut the "accelerator" right off, without any fear of stopping the engine.

The left-hand control would enable the engine to be throttled up or down when changing gear, like a car, and the general handiness of this type of control would soon become popular and be very greatly appreciated.

A34

Other improvements which might be carried out would include dual control of the clutch (handlebar and foot pedal), and an auxiliary control of the rear brake, by means of a long-hand-lever, fitted with a catch and operating through springs. This fitment would be used for holding a sidecar combination at rest on hills, and would, of course, be unnecessary for solo machines.

L.E.G.

THOSE FRENCH ROADS.

FROM a motorcyclist who has evidently "had some" we have received the following expressive wail. May his experiences over the other side add to his appreciation of English roads when riding is universal again:—

Pavé.

From Cambrai down to Le Cateau,
Valenciennes to Bavay,
I jump and bump and skid and stop
Upon that awful pavé.

The poor old 'bus, it spits and snorts,
And I curse like a navy—
A saint upon a greasy day
Would objugate that pavé.

Oh! some have had but slender wit,
And some but little, savvy;
But who in all the world was it
That first invented pavé?

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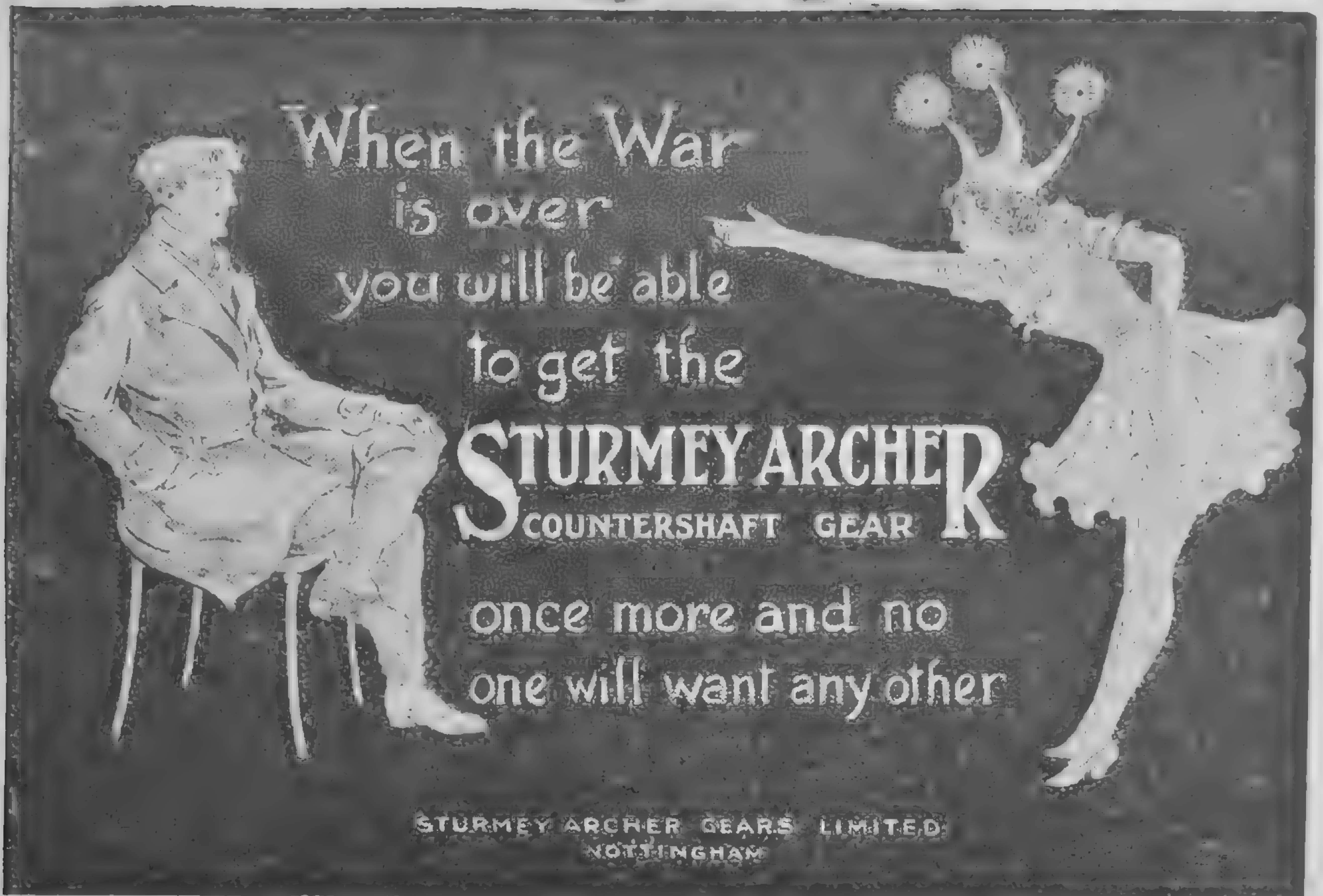
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Photo:
Hera Manuel.

Marshal Foch says

in his published writings on the war, that surety or security is one of the precedents for a successful offensive. And a successful offensive means Victory.

This dictum may be applied very aptly to the case of tyres. With them security must be assured by the purchaser, and security in their case means pilchage and freedom from trouble. These are the two outstanding features that should be looked for in tyres, and where they are found the resultant will always be service.

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THE EDITOR'S CORRESPONDENCE.

The Editor is not responsible for, neither does he necessarily agree with, the views taken by correspondents. Both sides of any topic are given equal publicity. A pen-name or initials can be given for publication, but the writer's full name and address must always be sent. All communications should be written on one side of the paper only.

PETROL CONSUMPTION ANOMALIES.

I am glad to have the chance of replying to "Armfree's" comments on my last letter, as I can here congratulate him on his article, "Some Petrol Consumption Anomalies." It will be interesting to read what it brought out in discussion. I have found difficulty in persuading friends to believe that my own results are correct, which is not to be wondered at, seeing that they represent over 50 ton-miles per gallon. My own view is that in addition to the mechanical reasons given for the anomalies, the influence of the driver's methods or whims is important.

Now to the other matter: I referred to the obviously stronger single throw shaft of a 90 degree twin as compared with the two-throw shaft of a horizontal twin. "Armfree's" has yet to come across this weakness in a 2½ Douglas. With-

out wishing to disparage a good engine, which has no doubt been strengthened, all I can say is that he has been fortunate. What I meant by "unsympathetic driving" in this connection took place to my knowledge on two occasions. Some years ago a 2½ Douglas, with loaded sidecar, was being driven along a very rough, slightly falling road, all out, with the result that the crankshaft broke. A few weeks later the same thing happened on a similar outfit. In these two examples the engine was loaded to its limit. Back wheel spin was probably occurring when bounding over the potholes, side-strains due to swaying on the uneven tramlined

road surface were being simultaneously experienced, and probably the gear ratio was too high. One cannot misuse for long even the most excellent machine without something going, usually the weakest part.

I have seen the method of starting a 2½ clutchless Douglas from a standstill by jerking in the gear with the engine running, but I never imagined that anyone would make a habit of it. My opinion of the method is unprintable. Probably it succeeds only in solo work, and because of the slip of belt and tyre, and the flexibility of crankshaft, chain, belt, tyre and frame. The latter also assists because of the crossed drive at the countershaft.

Arising from the above it is interesting to note that abuse of machinery is possible because of the flexibility of the un-

scientific frame which holds it together. It is safe to say that a perfect frame design would bring many fresh troubles to designers, unless all the wheels were sprung.

London, W. 1.

W. R. DETCHAR.

Unsympathetic Driving.

My experience with riders has been varied, and I have always found a good mechanic to be a good, or fairly good, rider and one who does not delight in "unsympathetic driving." On the other hand, I will give "Armfree's" the experience of a client who was not a mechanic by trade and whose knowledge of motorcycles was fair. In November, 1917, he became possessed of a 1917 war model Matchless,

which was his fourth machine. Soon after purchase I was called upon to detect some trouble as he could get no power. On rectifying the trouble a trial run was made, and to my amazement the following was his method of controlling the machine:—

In changing gear he did not throttle down his engine, but doclutched and slammed in his next gear with the engine roaring at terrific speed. His control of carburetter was very poor, konking on hills was frequent and was due only to excess of air. His driving was not neat, for corners were taken without care and stopping was carried out by violent braking, causing the whole

machine to tremble and imposing terrific strains no doubt.

Does "Armfree's" think this man capable of wrecking his gas engine, for the former's riding experience covers at least six years? Has "Armfree's" never heard of strained crankshafts or distorted connecting rods? If he has, does he not connect these coincidences with "Unsympathetic Driving," over-taxing of power and reckless stunts such as he mentions?

I myself deal very sympathetically with all internal-combustion engines, for their strain can only be realized by one continually in contact with them; therefore my contention is that one cannot expect a machine designed for 2½ h.p. to do the same work of a soundly built 8-10 h.p. unit.

Portsmouth.

ELECTRICAL INDIAN ARTIFICER.



A family outfit seen at Stonebridge recently. The motorcycle is a Rex.

AERIAL TERMS DEFINED.

Regarding the "airscrew" discussion, might I say that I agree with "F.B.S." and should take it that the pitch of a propeller is the distance it would advance per revolution if screwed along in some solid substance like jelly. The actual distance a screw would advance per revolution in a liquid or gas is a variable and indeterminate quantity.

I must respectfully contradict Mr. Wood in his assumption that an ideal propeller would drive no air backwards, for the

following reasons:—It is evident that the propeller must exert a backward force on the air, and it is equally evident that if the air molecules are pulled they will move backwards. In support of this I will quote the physical laws: "To every action there is an equal and opposite reaction," and: "Fluid molecules will be displaced when subjected to the slightest possible external force."

63, Calabria Road, N. 5.

W. R. BENDX.

A37



(Left) The Baydale Beck Inn on the Darlington to Barnard Castle road, where Dick Turpin is supposed to have spent a night. (Right) The old posting house at Greta (Yorks) where a favourite "snug" of Charles Dickens is still to be seen. The machine is a 1917 B.S.A. in each case.

The Simplicity of the Henderson.

Your correspondent Mr. W. G. Churchill does not do me justice. I am not, as he suggests, an American enthusiast, but rather an enthusiast over a particular type of machine which, unfortunately, the British manufacturer has not had the enterprise to supply. Indeed, my one regret with regard to the four-cylinder motorcycle is that it is not British. This, however, is likely to be remedied in the near future.

Regarding the 6 h.p. Enfield, I have no fault to find with this gallant mount. It is typical of the thoroughness of British workmanship. But I am convinced that from the point of view of simplicity the Henderson four-cylinder would prove more suitable for the novice. It is all so get-at-able, so easily learnt and understood, and so very easy to drive and control. A gear and clutch lever, a twist-grip, a foot brake, and there you have it. There is no exhaust lever and the ignition can generally be ignored. A child can start it from cold. But to place a machine with such terrific speed and acceleration in the hands of a novice could only have one end. I refer, of course, to the Henderson as we have so far known it. Unfortunately the latest models tend to complexity.

I am very glad to hear that there are "plenty" of machines other than two-strokes giving an all-round average of 100 m.p.g., but I do not know of them, although doubtless Mr. Churchill could furnish a list. I admit that "plenty" could be tuned to do it over a short period, but my experience is that very few do. I venture to say that very few riders would start out to cover 100 miles of average road under a promise to get there with no more than one gallon of fuel for the journey, their mounts being in average riding condition and not specially tuned up for the trial. That is, to my mind, the kind of test necessary to prove Mr. Churchill's statement.

Beddington, Croydon.

W. ARTHUR LONG, Captain.

Those Body Designs.

I should like to thank Capt. Long for his criticism. "Some criticism that," but it is good to think somebody is busy! I wonder that he did not enter the competition; the rules were simple, anybody could enter; besides, it is instructive to see others' ideas, also it is beneficial for the industry.

Respecting his fancy for inches—which is the easiest to write: 27 ins. or 2 ft. 3 ins.? There is no hard-and-fast rule; everybody knows what 27 ins. mean. I wonder what criticism there would have been had some of us carried out our designs in mm.s!

Now my design he calls "podgy"; I cannot find podgy in my dictionary, so will leave his meaning, and content myself to state that the body is roomy, comfortable, adaptable, also very convenient in use. Capt. Long also tells us that, to his mind, it is "several degrees uglier" than usual; well, I must remind him that there is often beauty in ugliness. Consider what a lovely face a bull dog has!

Eh! never mind; I will not dwell upon the beauty of my design, but may mention that it has other qualities; it is streamline, and the length is 85 ins. (I beg pardon, 7 ft. 1 in.!), that being only 1 in. longer than his suggestion for length.

JOHN WILLIAM BROWN, Private.

151, Victoria Street, St. Albans.

A39

The Possibilities of the Petrol Turbine.

I see in your issue of 12th November that "Pasadena," in reply to "I. N. Terest," makes some statements that call for comment, and I hope "I.N.T." will pardon me for "butting in." The statements referred to are so conflicting that I can only assume that "Pasadena" has been studying a text book with some of the pages missing.

In the description of the turbine in your issue of 8th October a great saving in thermal and mechanical efficiency is claimed by using the cooling heat, etc.; possibly a slight gain in thermal efficiency might be obtained by heating the fuel, but this arrangement cannot affect or increase mechanical efficiency. Regarding the raising of steam by exhaust heat: this is governed by the quantity of B.T. units available. Eighty per cent. of the total heat is lost in radiation, consequently the heat available would not be sufficient to raise steam for the purpose intended. I cannot see any connection whatever in the statement that the speed is low through the port opening "as the pressure rises and the final expansion and combustion takes place in the vanes." No doubt the speed is low through inefficient heading combined with low velocity of expanding gases; the statement would seem to infer that a further explosion or combustion takes place in the vanes, which is impossible, the combustion having already taken place in the cylinder.

Further, I really must call attention to the statement that the downfall of all turbines is the power absorption of mechanical parts. Apparently "Pasadena" is not in touch with the latest designs in turbine construction. The steam turbine is one of the most efficient and reliable prime movers on the market; there is no frictional contact with the moving parts, neither are there any heavy duty reciprocating parts.

With regard to the nozzles employed, they cannot resemble the De Laval type if they are constantly changing in form. Possibly the space between the fixed and moving blades is referred to.

I would suggest to "Pasadena" that the exhaust outlet be taken near the periphery, as, owing to the high centrifugal force, considerable power will be absorbed in driving gases to exhaust in the centre of the vane assembly. D.S.

Leicester.

When Petrol is Unrestricted.

Seeing that the restrictions on motor cycling are likely to be removed, or at least modified, shortly, may I make a suggestion?

Why should you not organize another emancipation day, somewhat on the lines of the Gipsy Club meetings? Perhaps several could be arranged—to various centres. G.A.

14, Albany Road, New Malden, Surrey.
[We hope to make an announcement somewhat on these lines in an early issue.—Ed.]

The Editor is always pleased to receive letters for publication. It is essential, however, that they should be received as early in the week as possible.

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THE PERFECT PASSENGER MOTORCYCLE

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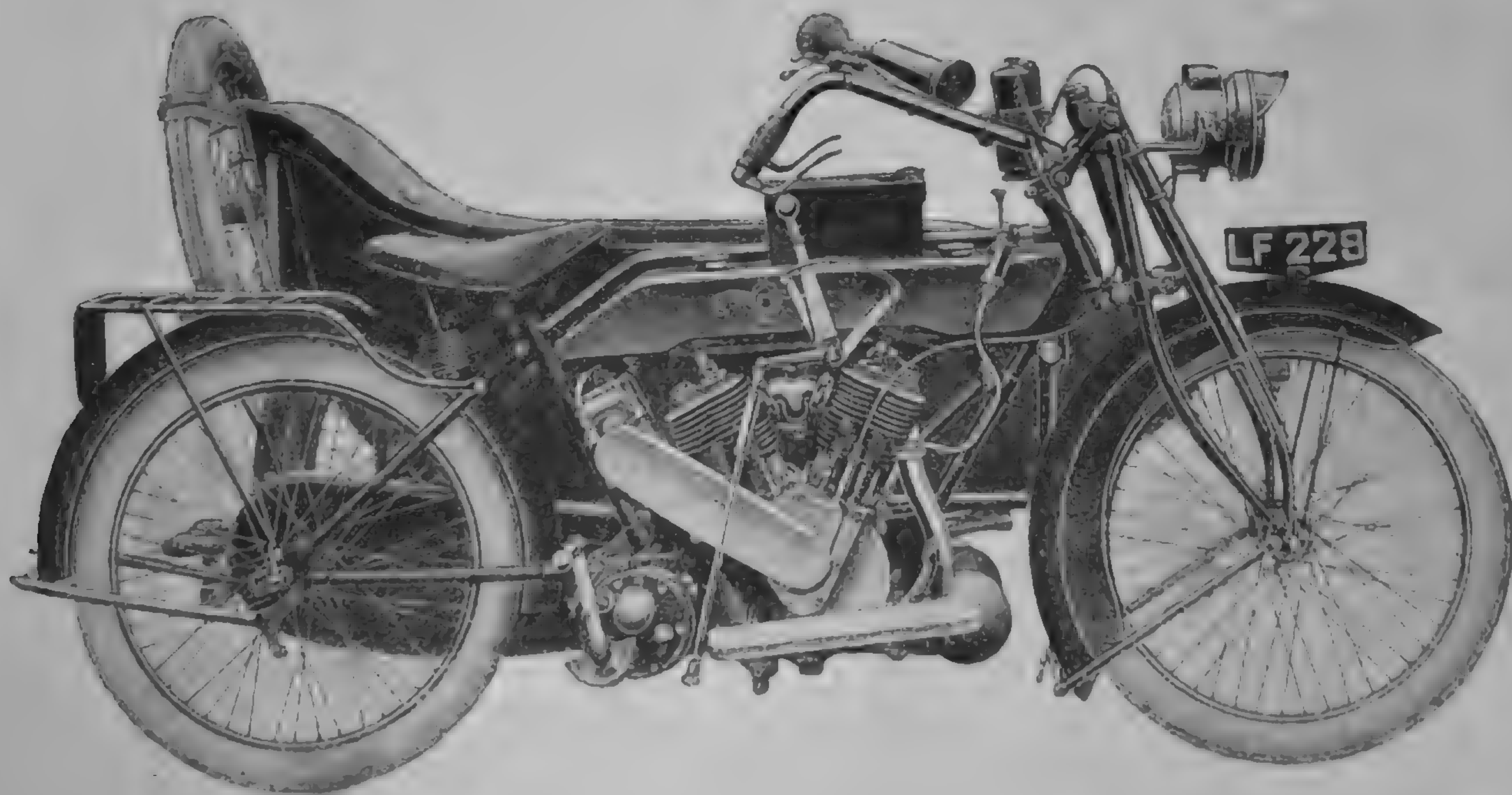
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—**CALTHORPE** motorcycles. All models in stock for immediate delivery; no permits required. P. J. Evans, John Bright St., Birmingham. zzz-10

—**CALTHORPE**, 1916, 2-stroke, lamps and horn, splendid condition, £30. Parker and Son, St. Ives, Hunts. 471-235

—**CALTHORPE**, 1916, 2-stroke, Albion 2-speed, T.T. model, guaranteed perfect, £26, or exchange combination. 51 Maplethorpe Rd., Thornton Heath, S.E. 471-a633

—**CAMPION** powerful motorcycle and sidecar combination, specially built for Cotswolds, 6hp J.A.P. engine, frame and sidecar chassis with extra strong girdered chassis, 3-speed Jardine gearbox with countershaft to chain drive; trial run by appointment. Ed. R. Cross, Pomfret House, Cheltenham, Glos. 471-254

—**DAYTON**, 2-stroke, new condition, perfect order throughout, splendid bargain, £16 10s. Speechley, 1 Gunnersbury Lane, Acton. 471-a655

—**DOUGLAS** motors. Send your name for waiting list now to Gibb, Douglas Expert, Gloucester. Phone 852. 501-460

—**DOUGLAS** 2½ motorcycle for sale, 1914, in first-class condition, £25. Royal Berks Motor Co., 23a King's Rd., Reading. 471-a580

—**DOUGLAS**, 1915, 2½hp, 2-speed, £42 10s. Speechley, 1 Gunnersbury Lane, Acton, London. 471-a664

—**DOUGLAS**, 1913, 2½hp, 2-speed, splendid condition, £25. G. E. Borwick, Craig Wood, Windermere. 472-206

—**ENFIELD**, 1915, 3hp, 2-speed, not used for 12 months, splendid condition, £40. Parker and Son, St. Ives, Hunts. 471-236

—**ENFIELD** combination, 1916, Lucas dynamo lighting, hood, screen, etc., elaborate turnout, £105, or lightweight and cash. 51 Maplethorpe Rd., Thornton Heath, S.E. 471-a631

—**F.N.**, 2-stroke, good condition, perfect running order, bargain, £17. Moss, 303 Crystal Palace Rd., Ensl Dulwich, S.E. 471-a636

—**F.N.**, 2½hp, 2-speed and free, Binks carburettor, magneto, rebushed, good tyres, lamp, etc., £15; view by appointment. Youell, Lynton, Bishops Park Rd., Norbury, S.W. 16. 471-a646

—**HUMBER**, 1913, 3½hp, 2-speed, and coach-built sidecar, £25. Elce and Co., 15-16 Bishopsgate Ave., Camomile St., E.C. 3. 471-231

—**HARLEY-DAVIDSON**, 1915-16, electric model, complete, Remy, recently overhauled by makers, everything in perfect running order, external appearance fair, nearly new sidecar, Stewart speedometer, may be seen and tried by appointment. Long, 21 Guy Rd., Biddington. zzz-174

—**HARLEY-DAVIDSON** 1917 electric combination, with Swan sporting sidecar, £123; similar standard combination, but with magneto, £125; 1917 magneto model, with coach-built sidecar, £127. Maude's, 100 Gt. Portland St., London, W. 1. 471-228

—**HARLEY-DAVIDSON**. Always a good selection of fully-guaranteed second-hand machines. Nottbeck, Harley-Davidson Specialist, 37 Turnham Green Terr., W. 471-253

—**INDIAN**, 1915, 7-9hp, guaranteed thoroughly overhauled, runs equal new, £45. Exchanges with pleasure. Palmer's Garage, Tooting. 481-149

—**INDIAN**, 7-9, with coach-built Bramble sidecar, hood and screen, £34. 118 Devonshire Rd., Chiswick. 471-a644

—**INDIAN**, 7-9, 1913, 2-speed, spring frame, kick-start, 2-seater, Mills-Fullford sidecar, £50; seen after 6 p.m. or appointment. 184 Dale St., Chiswick. 471-a645

—**JAMES**, 4½, 3-speed, speedometer, lamp, etc., mileage 3930, present price £88, 48 guineas; wanted, combination, Enfield preferred. 54 Aachurch Rd., Croydon. 471-a638

—**J.A.P.**, 1914, 4hp, recently overhauled and in running order, particulars on application, price £25. Sheppard, 19 Ridley Rd., Harlesden, N.W. 10. 471-a651

—**J.E.S.** auxiliary, 1½hp, almost new, ad complete, £10. G. E. Borwick, Craig Wood, Windermere. 472-209

—**KERRY-ABINGDON**, 3½hp, good running order, new Dunlop tyre on back wheel, £23. Parker and Son, St. Ives, Hunts. 471-237

—**MATCHLESS** war model combination, with spare wheel and tyre, £125; trade inquiry entertained; seen by appointment. J. Tassell, 1a Bloomfield Rd., Plumstead, S.E. 18. 475-a612

—**MATCHLESS**. We can give immediate delivery from stock of the W.O. combination, complete with spare wheel, £125. Elce and Co., 15-16 Bishopsgate Ave., Camomile St., E.C. 3. 471-233

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—**NEW IMPERIAL**, 1915-16, J.A.P. 3½hp, 2-speed countershaft gear, heavy Dunlop tyres, not used for 18 months, £23, or exchange. 40 Clonmore St., Southfields, S.W. 471-251

—**NORTON**, late 1916, 3-speed chain-cum-belt combination, all accessories, excellent condition, £82. Maude's, 100 Gt. Portland St., London, W. 1. 471-227

—**REX**, 6hp, tree engine, Roe speed gear, spring forks, magneto ignition, spring seat pillar, £19. Percy, 121 Romford Rd., E. 15. 471-a563

—**REX** 1913 6hp combination, £40; a powerful tandem-seated combination wanted; would prefer to exchange above, with cash. Boral, 4c Peabody Estate, Fulham. 471-a640

—**REX**, 6hp, 1915, coach-built, handsome combination, seldom used, Bosch magneto, 2 speeds, handle starting, drip feed, fully equipped, lamp sets, speedometer, etc., guaranteed perfect, any trial, bargain, £68. Fred, Charles St., Commercial Rd., E. 471-a643

—**REX**, twin, and sidecar, 6hp, 2-speed, handle start, Bosch magneto, £28 10s. Speechley, 1 Gunnersbury Lane, Acton, London. 471-a661

—**ROVER** 1917 3½hp combination, 3 speeds, countershaft gear, coach-built torpedo sidecar, all lamps, horn and speedometer, £73. Maude's, 100 Gt. Portland St., London, W. 1. 471-229

—**ROVER**, late 1916 model, 3-speed countershaft gear, clutch, kick start, Lucas lighting set, Cowey speedometer, 2 toolbags and tools, extra heavy Palmer cord tyres, only done a few miles, accept £65, exchange considered. 40 Clonmore St., Southfields, S.W. 471-256

—**ROYAL RUBY** 1917 combination, 6-8hp J.A.P. engine, countershaft 3-speed, hand clutch, Phoenix coach sidecar, 2-seater, hood, screen, side curtains, fully equipped, beautiful turnout, petrol licence end of December, price 160 guineas. Speechley, 1 Gunnersbury Lane, Acton, London, W. 1. 471-a663

—**RUDGE**, 3½, Philipson's, splendid condition, fast, £25; Rudge handlebars, complete, 18s.; Rudge clutch, complete, 28s.; wanted, late F.N., exchange, adjustment. 31 Market St., Eastleigh. 471-a639

—**RUDGE**, 3½, 2 speeds, clutch, splendid condition, £23, bargain. Saunders, Westbury Lodge, Buckhurst Hill, Essex. 474-567

—**RUDGE-MULTI**, 1914, and sidecar, 3½hp, lamps, horn, speedometer, very good condition, £35. Elce and Co., 15-16 Bishopsgate Ave., Camomile St., E.C. 3. 471-233

—**SINGER**, 3½hp, countershaft, 2-speed, clutch, new condition, sacrifice £33 10s. Speechley, 1 Gunnersbury Lane, Acton, London. 471-a662

—**SUNBEAM**, 1916, 3½hp, little used and in exceptionally fine condition, accessories, £65, Douglas wanted. Box No. 4482, c/o "Motor Cycling." 471-a634

(Continued.)

WAUCHOPE'S

Peace Offer.

New Machines.

List of Sidecars in Stock.

No.		£ s.
4647	1913 Montgomery castor-wheel side-car, No. 5...	24 11
6263	1913 Gondola sidecar ...	7 10
7751	Williamson cab ...	11 6
8923	Bradbury wicker tradesman's carrier, new ...	12 0
10284	Model B3 Canoelet, coach-built ...	14 8 9
10531	1916 Canoelet sidecar ...	13 1
10558	Canoelet sidecar ...	14 17
10667	Coach-built sidecar, new ...	14 18
10812	Wicker sidecar ...	3 10

Second-hand Machines in Stock.

No.		£ s.
6421	3½ h.p. 1908 Minerva ...	15 0
7551	3½ h.p. 1905 Rex ...	12 18
7708	3½ h.p. 1908 N.S.U. ...	15 0
7992	3½ h.p. 2-speed Falmir ...	15 0
8320	3½ h.p. 1911 Ariel, variable gear ...	20 0
8561	3½ h.p. Vindee and sidecar ...	17 10
8718	3½ h.p. 2-speed Falmir and sidecar ...	22 10
8893	1 h.p. 1914 Indian, with elec. strtr. ...	60 0
8832	1½ h.p. 1909 Motosacoche ...	9 0
9076	5 h.p. 1907 f.e. Le Roc ...	15 0
9594	5-6 h.p. 2-speed N.S.U. ...	30 0
9633	2½ h.p. 1912 Premier, variable gear ...	11 10
9767	5 h.p. 1908 2-speed Rex and sidecar ...	27 10
9778	3½ h.p. 1914 3-speed New Imperial and sidecar ...	37 10
9823	2½ h.p. 1912 twin Enfield ...	27 10
9839	3½ h.p. 1907 Triumph and sidecar ...	11 0
9844	5-6 h.p. N.S.U. ...	16 10
10021	3½ h.p. 1912 Swift ...	11 0
10142	3½ h.p. 1913 3-speed Singer ...	32 10
10189	3½ h.p. 1912 Scott ...	—
10271	2½ h.p. 1915 2-speed Levis ...	11 0
10323	2½ h.p. 1911 2-speed Douglas ...	25 0
10333	3½ h.p. 1908 Triumph ...	17 10
10430	2 h.p. 1914 2-speed Calthorpe-Junior ...	17 11
10485	4 h.p. single-speed Bradbury ...	23 10
10567	2½ h.p. 1915 2-sp. 2-stroke Calthorpe ...	11 0
10614	3½ h.p. 1911 single-speed Humber ...	18 10
10638	5 h.p. 1942 single-speed Indian ...	20 0
10687	1½ h.p. single-speed J.E.S. ...	10 0
10717	4½ h.p. 3-speed Precision ...	20 0
10748	2½ h.p. 2-speed Hobart ...	11 0
10753	5-6 h.p. F.N. ...	—

Petrol Coming.

The Motorcyclist is again coming into his own, and it is officially announced that petrol allowances will shortly be increased. Very nice for the man with machine but, well, this is where Wauchope comes in. Any of the machines in this list will be reserved for a customer, on payment of a deposit, until he is able to drive it away a free motorcyclist.

Second-hand Machines— continued.

No.		£ s.
10769	3½ h.p. 1912 f.e. B.S.A. ...	25 0
10807	3½ h.p. Zenith-Gradua ...	25 0
10831	5-6 h.p. 1915 2-sp. Falmir and a.c. ...	10
10858	3½ h.p. 1910 or 11 ss-sp. Humber ...	12 0
10863	2½ h.p. 1915 2-sp. Grandex-Precision ...	30 0
10879	3½ h.p. single-speed Rex ...	17 10
10890	3½ h.p. 2-sp. Falmir and sidecar ...	12 10
10893	4 h.p. 1913 f.e. Bradbury and a.c. ...	25 11
10898	2½ h.p. single-speed Radco ...	20 0
10937	3½ h.p. 1913 single-speed James ...	25 0
10973	4 h.p. 1914 2-speed Singer and a.c. ...	45 0
11003	Girling commercial triear ...	30 0
11015	2½ h.p. 1913 f.e. Singer ...	32 10
11021	2½ h.p. 1910 2-sp. Royal Enfield ...	16 10
11079	2½ h.p. 1915 2-sp. Clyno ...	22 10
11112	3½ h.p. 3-speed Premier ...	27 10
11118	3½ h.p. single-speed Rudge ...	11 0

Second-hand Machines— continued.

No.		£ s.
11129	4 h.p. 1914 Triumph ...	40 0
11130	Warwick commercial carrier ...	11 0
11135	3½ h.p. 3-sp. New Hudson and a.c. ...	11 0
11137	Warwick commercial carrier ...	45 0
11167	5-6 h.p. 1914 Carden monocoar ...	55 0
11193	8 h.p. 1913 de luxe Morgan ...	11 0
11199	2½ h.p. 1915 single-speed Levis ...	20 0
11201	7 h.p. 1913 Swift light car ...	80 0
11208	2½ h.p. 1916 Popular Levis ...	25 0
11218	3½ h.p. Rex and sidecar ...	12 10
11219	2½ h.p. 1915 Allon ...	20 0
11226	6 h.p. 1914 A.J.S. and sidecar ...	77 10
11231	3½ h.p. 1911 Humber ...	12 10
11235	2½ h.p. 1918 R. Enfield ...	52 11
11238	3½ h.p. Premier ...	11 0
11241	2½ h.p. 2-stroke O.K. Junior ...	20 11
11254	3 h.p. 2-sp. R. Enfield ...	25 0
11265	3 h.p. 1911 R. Enfield ...	33 10
11279	2½ h.p. 2-speed Calthorpe-J.A.P. ...	32 10
11302	4 h.p. A.B.C. engine (new) ...	35 0
11308	4 h.p. 1914 s-sp. Norton ...	40 0
11317	6 h.p. 1916 R. Enfield and sidecar ...	57 10
11324	1 h.p. Grandex ...	11 10
11331	1 h.p. 1915 R. Enfield and sidecar, dynamo lighting ...	94 10
11332	6 h.p. 1915 R. Enfield and sidecar ...	85 0
11334	4½ h.p. 1913 James and sidecar ...	17 10
11350	4 h.p. 1914 Triumph and sidecar ...	47 10
11351	3½ h.p. 2-speed Scott and sidecar ...	11 0
11354	1 h.p. 1916 R. Enfield and sidecar ...	94 0
11355	8 h.p. 1917 Morgan ...	105 0
11362	10 h.p. J.A.P. engine machine (overhead valves) ...	45 0
11361	2½ h.p. 2-speed Calthorpe ...	27 10
11362	1 h.p. 1916 Zenith and sidecar ...	11 0
11367	4½ h.p. 1914 James and sidecar ...	11 10
11371	4 h.p. 1911 Triumph and sidecar ...	47 11
11372	4 h.p. 1915 Norton, s-sp. ...	11 0
11376	8 h.p. 1914 Swift light car ...	135 0
11377	1 h.p. 1916 R. Enfield and sidecar ...	90 11
11382	2½ h.p. 2-sp. 1914 Calthorpe-J.A.P. ...	30 0
11383	7-9 h.p. 1916 3-sp. Indian ...	73 10
11384	4 h.p. s-sp. Triumph, T.T. ...	40 0
11385	3½ h.p. 1914 James ...	50 0
11386	2½ h.p. 1913 Sunbeam ...	47 10
11388	8 h.p. 1918 new Imp.-J.A.P. ...	94 11
11389	7-9 h.p. 1911 Swift light car ...	115 0
11393	3½ h.p. 3-speed Singer ...	11 0
11395	6 h.p. 1916 R. Enfield and sidecar ...	87 10
11396	2½ h.p. 2-speed new Imp.-J.A.P. ...	35 0
11400	3½ h.p. 1915 countershaft Premier ...	47 10
11402	2½ h.p. 1915 new Imp.-J.A.P. ...	35 0
11405	6 h.p. 1917 R. Enfield and sidecar ...	11 0
11406	2½ h.p. 2-str. R. Enfield ...	11 0
11408	3½ h.p. 1916 twin James ...	52 10
11409	7-9 h.p. 1916 Powerplus Indian and sidecar ...	80 0

9, Shoe Lane, Fleet Street, London.

'Phone—Holborn 5777.

Telegraphic Address—"Opifcer, Fleet, London."

— **TRIUMPH**, 1914, 3½hp, Dunlop accessories, Bosch magneto, good running order, trial, £40; call 19 to 12, Mrs. Hexton, 11 Crown Rd., Hampden, 471 238.

— **VICTORIA-PRECISION**, 1914, 2½hp, 1-speed, and clutch, only done 1000, perfect, offers, 19, 11, Carver, Bond St., Arundel, 471-6535.

MISCELLANEOUS MOTOR-CYCLES (unclassified).

— **TO beginners**. We have quite a number of motorcycles, from £10. Send for our special beginners' list. The North Wales Motor Exchange, Chester Street, Wrexham, 227-435.

— **RIDER TROWARD and CO.**, 31, 40b and 11 High St., Hampstead, have always a stock of 200 motorcycles and cars for sale. Exchanges entertained. Write for full lists and state requirements.

— **RIDER TROWARD and CO.** are open on Sundays from 10.30 a.m. to 5.30 p.m., and on weekdays from 8 a.m. to 7 p.m. One minute from the Hampstead Tube Station and 15 minutes from the West End.

— **RIDER TROWARD and CO.** give below a selection of their stock of motorcycles. Telephone, Hampstead 5392, 4904.

— **RIDER TROWARD and CO.** Allen, 1916, 2-speed, 2-stroke, 26 guineas. Below.

— **RIDER TROWARD and CO.** B.S.A., 1916, 4½, 3-speed, chain-cum-belt, 58 guineas, with cane sidecar, 11 guineas; B.S.A., 1916, 4½hp, all-chain, coach combination, 65 guineas. Below.

— **RIDER TROWARD and CO.** Calthorpe, 1915, 21 guineas; Calthorpe 2-stroke, 1916, 2-speed, 23 guineas; Centaur, 1913, 3½hp, 2-speed, clutch, 29 guineas. Below.

— **RIDER TROWARD and CO.** Douglas, 1913, 1½hp, 2-speed, 28 guineas; 1914 ditto, 35 guineas.

— **RIDER TROWARD and CO.** Enfield, 1916, 3hp, 2-speed, clutch, as new, 11 guineas; 1916 ditto, 32 guineas. Below.

— **RIDER TROWARD and CO.** F.N., 1913, 5-6hp, 2-speed, 4 cylinders, 27 guineas. Below.

— **RIDER TROWARD and CO.** Harley Davidson, 1915, 7-9hp, 2-speed combination, 65 guineas; solo, 57 guineas; Humber, 1913, 3½hp, 2-speed, 27 guineas; Humber, 1911, 3½hp, 2-speed, 19 guineas. Below.

— **RIDER TROWARD and CO.** Indian, 1915, 7-9hp, T.T. clutch, 11 guineas; Indian, 1914, 7-9hp, T.T. clutch, 29 guineas; Indian, 1914, 7-9hp, 2-speed, 35 guineas. Below.

— **RIDER TROWARD and CO.** James, 1917, 2-speed, stroke, 33 guineas; James, 1914, 4hp, single-speed, renovated, 29 guineas. Below.

— **RIDER TROWARD and CO.** Kerry-Abingdon, 1913, 4hp, 2-speed, 21 guineas; Kerry-Abingdon, 1914, 4hp, T.T., 26 guineas; Lincoln-Elk, 1913, 3½hp, variable gear, waterproof Bosch, 18 guineas. Below.

— **RIDER TROWARD and CO.** Lewis, 1915, Popular, 19 guineas. Below.

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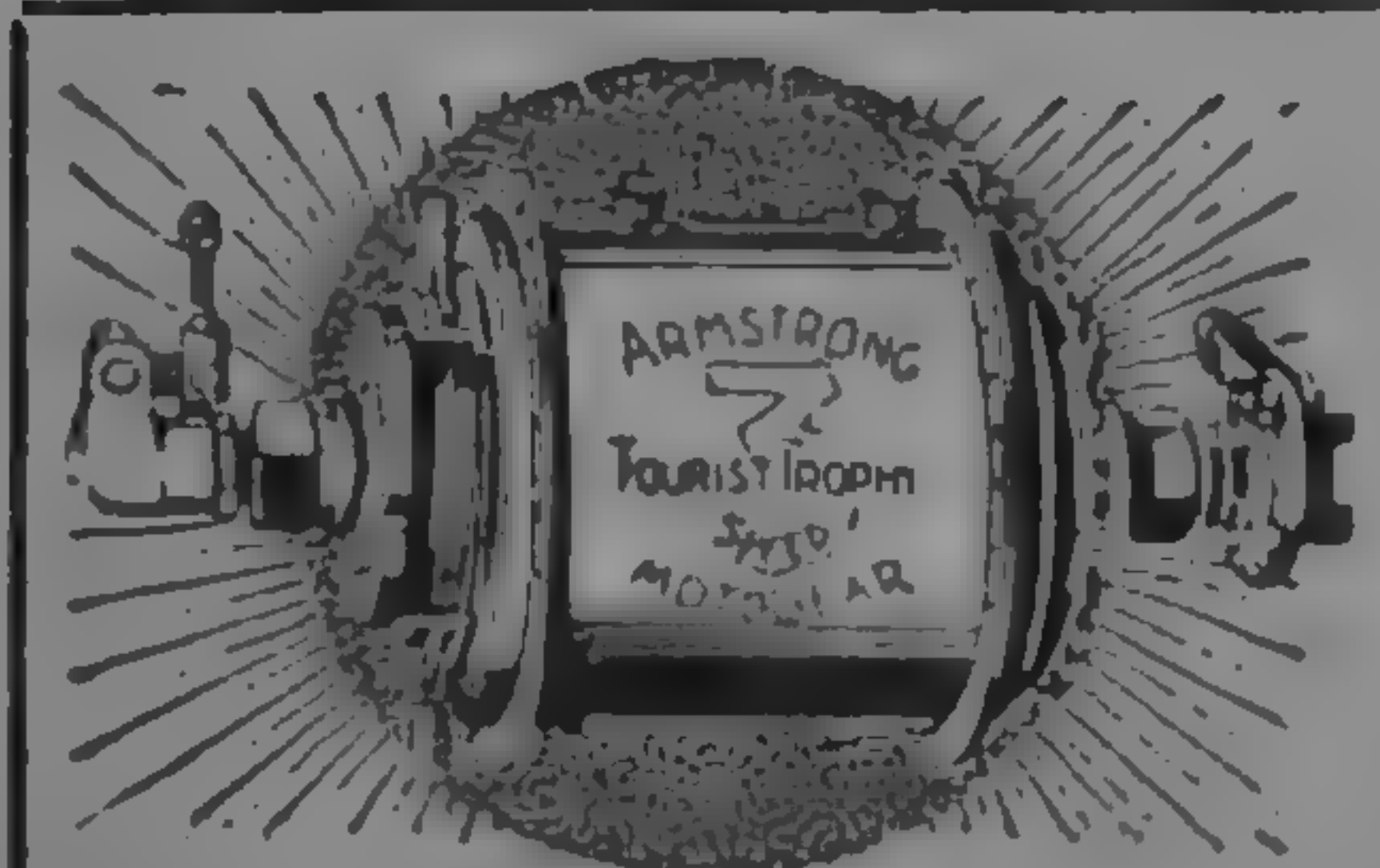
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Under the above regulation, advertisements offering situations with firms whose works are situated within 30 miles of London and whose business consists wholly or mainly in engineering, shipbuilding, or the production of munitions of war, or of substances required for the production thereof, must contain the words:—"NO PERSON ENGAGED ON GOVERNMENT WORK OR RESIDENT MORE THAN 10 MILES DISTANT NEED APPLY."

When the advertiser's works are situated more than 30 miles from London all applications must be made through a Labour Exchange, by means of a box number allocated by the Board of Trade. Forms of application may be obtained from any Labour Exchange, or from the offices of this paper. Each advertisement must clearly state that no person already engaged on Government work need apply.

—WANTED, 3 good motor and motorcycle mechanics, good wages to right men, ex-Service men only need apply. The H.C. Motor Co., 317 Finchley Rd., N.W. 3. 471-250

SPARE PARTS.

—A.J.S. spares and repairs. Sole London and district agents, H. Taylor and Co., Ltd., Store St., W.C. 222-99

—A.J.S. spares, prompt delivery. A.J.S. Agent, Cyril Williams, B Dept., Chapel Ash Depot, Wolverhampton. 452-04

—DOUGLAS cylinders, pistons, connecting rods, tappets, valves, cam wheels, crankshafts, flywheels, rocker arms, crankcases, ball races, timing pinions, etc., etc. We can supply any part for 2½hp Douglas engines, also repair same. See "Repairs." Chandler, Reyre and Williams.

—PREMIER cylinder, perfect, timing wheels, crankcase, rocker arms, etc., etc. Chandler, Reyre and Williams.

—MORGAN Grand Prix engine spares. We can supply from stock any part for these engines, guaranteed perfect.

—SCOTT cylinders, pistons and a few other spares. Chandler, Reyre and Williams.

—TRIUMPH pistons, bushes, valves, rings, pulley wheels, cam wheels, etc., etc., new. Second-hand 1914 cylinder, perfect, and several earlier cylinders, 1910-11-12-13. Triumph second-hand clutch wheel, less spindle and cones, otherwise perfect. Chandler, Reyre and Williams, Hitchin. 222-1

(Continued.)



Ride with
unity through
the World.

Make smooth the rough
places by fixing

TAN-SADS

freely.

1919 MODELS ready JANUARY.

TAN-SAD WORKS, 1, Waterloo St., Birmingham.

RIDER TROWARD

& CO.

THE time that we have all been longing for has arrived, perhaps a little sooner than most people expected, and in the "Peace" issue of this paper, we think that we can do no better than to discuss our post-war policy. During the war we have been faced with great difficulties—shortage of labour, difficulty in obtaining parts, pressure of Government work, railway delays, etc., which we trust will now be entirely removed.

During the time that we have been in the trade we have realised that dealing in Second-hand Motorcycles is like dealing in horses—that sometimes faults exist that are not apparent even to ourselves, and also that a small percentage of people expect a new machine at a second-hand price.

Our aim is to satisfy *everyone*, and as we realise that some people *are* hard to satisfy, whilst every customer wishes to get a machine exactly to his liking, from to-day we are adopting the following principle, from which we trust we shall never depart.

If you purchase a Machine from us, whether for cash or exchange, we give you three days clear trial, and if in that time you do not approve of the machine, we give you your money back in full, without question.

That is to say, our Peace Terms are:—

SATISFACTION OR YOUR MONEY BACK.

In addition to this, all our old terms hold good, namely, that we will exchange your machine within THREE WEEKS of purchase for anything else from stock, and that all our machines, unless otherwise stated, are

GUARANTEED FOR THREE MONTHS.

We would remind country customers that they can still send machines by rail and should write to us if in difficulty, and we remind all our customers that none of the machines advertised below require permits. We invite clients to take advantage of "Motor Cycling" Deposit System.

In concluding our Peace Message, we thank all those who have supported us and helped us to keep going during the trying times that are past, and we ask for their continued support in the future. The great majority we know we have pleased, and we know that they will come back to us. To the inevitable few who have not been satisfied, we apologise and ask for their indulgence, owing to the difficult times now past for ever.

Selection from Stock:—

A.J.S., 2½ h.p., 2-speed, clutch, kick-start, run 1000 miles only	gns.
Abingdon-King-Dick, 1915, 4 h.p., T.T., 3-speed, sporting sidecar, special competition machine, extra large tank	gns.
B.S.A., 1913 ½ h.p., 2-speed, clutch	27 gns.
British Excelsior (new), 2½ h.p. J.A.P., 2-speed, clutch, 1918 model	£48 10s.
Bradbury, 1914, 4 h.p., 2-speed countershaft	gns.
Bradbury, 1914, 4 h.p., 2-speed, clutch, re-enamelled and replated	32 gns.
Bat-J.A.P., 1910, 3½ h.p., Mabon clutch	16 gns.
Calthorpe-J.A.P. (new), 1918, 4-5 h.p. twin combination	£18 6s.
Calthorpe-J.A.P., (new), 1918, 2½ h.p., 2-speed, cl.	£47 0s.
Calthorpe-J.A.P., 1916, 2½ h.p., 2-speed, clutch	32 gns.
Calthorpe-J.A.P., 1915, 2½ h.p., 2-speed, cl.	gns.
Calthorpe Junior, 2-speed, 2 h.p.	21 gns.
Chase-J.A.P., 1915, T.T., 6-8 h.p., round tank, Jardine 2-speed	45 gns.
Douglas, 1911, single speed	16 gns.
Douglas, 1911, 2-speed	21 gns.
Douglas, 1913, 2½ h.p., 2-speed, T.T.	31 gns.
Douglas, 1914, 2½ h.p., 2-speed, T.T.	35 gns.
Douglas, 1914, 2½ h.p., 2-speed, as new	gns.
Enfield, 1916, 3 h.p., 2-speed, clutch, kick-start, as new throughout	gns.
Enfield, 1916, 3 h.p., 2-speed, cl., k.s.	38 gns.
F.N., 1913, 5-6 h.p., 4-cyl., 2-speed, clutch	gns.
Humber, 1911, 3½ h.p., 2-speed, clutch, handle-start	19 gns.
Humber, 1912, 3½ h.p., 2-speed, clutch, handle-start	23 gns.
Humber, 1913, 3½ h.p., 2-speed, clutch, handle-start	27 gns.
Humber, 1918, 3½ h.p., flat twin, 3-speed, military model, run under 1000 miles	68 gns.
Humber, 1918, 6 h.p., flat twin water-cooled combination, in fine condition	89 gns.
Humber, 1918, 6 h.p., flat twin water-cooled combination, with spare wheel, as new	95 gns.
Indian, 1916, Powerplus, 3-speed, 8-10 h.p., as new	77 gns.
Indian, 1915, 7-9 h.p., T.T. clutch, good order	42 gns.
Indian, 1914, 7-9 h.p., 2-speed, clutch	gns.
Indian, 1912, 3½ h.p., single-speed	21 gns.
James, 1914, 4½ h.p., single speed, re-enamelled	31 gns.

James (new), 1918, 5-6 h.p., 3-speed military model combination, by 3 in. wheels	£104 0s.
James (new), 1918, 4½ h.p., 3-speed combination	£99 0s.
James, 1914, 4½ h.p., 3-speed, re-enamelled	36 gns.
Kerry-Abingdon, 1914, 4 h.p., T.T. clutch	26 gns.
Lincoln-Elk, 1913, 3½ h.p., variable gear	21 gns.
Motosacoche, 1917, 3½ h.p., twin, Enfield gears, kick-start, and coach sidecar	59 gns.
Morgan, 1914, sporting air-cooled 8-10 h.p.	75 gns.
Morgan, 1914, Grand Prix water-cooled J.A.P.	88 gns.
New Imperial, 1916, 2-speed J.A.P., 2½ h.p.	31 gns.
New Imperial, 1915, 2-speed J.A.P., 2½ h.p.	26 gns.
N.S.U., 1913, 3 h.p., 2-speed, clutch	22 gns.
N.S.U., 1914, 3 h.p., T.T., actual T.T. mount	25 gns.
Precision, 1914, 4 h.p., 2-speed, clutch	26 gns.
Premier, 1914, 3½ h.p., 3-speed, coach sidecar	27 gns.
Premier, 1914, 3½ h.p., 2-speed countershaft	31 gns.
Premier, 1913, 3½ h.p., 3-speed combination	31 gns.
Premier, 1914, 3½ h.p., 3-speed	29 gns.
Premier, 1913, 2½ h.p., clutch	21 gns.
Quadrant, 1914, 4 h.p., 2-speed, clutch, re-enamelled	31 gns.
Quadrant, 1913, 4 h.p., 3-speed	24 gns.
Rover, 1914 (late), 3½ h.p., 3-speed, clutch, as new	37 gns.
Rudge-Multi, 1917, T.T. 3½ h.p., I.O.M. disc wheels	65 gns.
Rudge-Multi, 1916, T.T. 3½ h.p., I.O.M.	59 gns.
Rudge-Multi, 1915, T.T. 3½ h.p., good order	46 gns.
Rudge-Multi, 1915, T.T. 3½ h.p., good order	39 gns.
Rudge Multi (new), standard, 3½ h.p.	62 gns.
Rudge-Multi, 1914, 3½ h.p., re-enamelled	36 gns.
Rudge-Multi, 1913, 3½ h.p., standard	28 gns.
Rudge, 1913, 3½ h.p., variable gear, re-enamelled	29 gns.
Singer, 1913, 2½ h.p., lightweight, re-enamelled	19 gns.
Sunbeam, 1915, 6-8 h.p., 3-speed, Gloria sidecar	57 gns.
Triumph, 1913, 3½ h.p., 3-speed combination	35 gns.
Triumph, 1913, 3½ h.p., T.T. clutch	25 gns.
Zenith-Gradua, 1915, 3½ h.p., standard, re-enamelled	37 gns.
Zenith-Gradua, 1914, 3½ h.p., standard, re-enamelled	37 gns.
Zenith-Gradua, 1913, 3½ h.p., standard	27 gns.
Zenith-Gradua, 1913, 3½ h.p., standard	24 gns.
Omega, 1916, 2-speed, 2-stroke	27 gns.
Juno, 1916, 2-speed, 2-stroke Villiers engine	17 gns.
Garden monocar, 1915, de luxe, 5-6 h.p. J.A.P., overhauled and repainted	55 gns.

31, 40b & 78, High Street, HAMPSTEAD.

—WHEN you are fed-up with those so-called spare-part stockists, write to

—JONES'S GARAGE. We have £1000 of spare parts for Ariel, B.S.A., Douglas, Enfield, P. and M., Rudge, Triumph, J.A.P. They are all new, and the majority genuine. Below.

—WE can supply from actual stock practically all spare parts for Douglas, piston rings, cam wheels, exhaust rockers, 6s. 6d. each; big-end bolts and nuts, 1s.; inlet valve rockers, 5s. 6d.; valves, valve springs, flywheel sprockets, bushes, cam wheel studs, crankshaft timing pinions, intermediate wheels, magneto wheels, lay-shafts, screwed sleeves, plain sleeves, mainshafts, 2-speed only, pulley wheels, ball bearings for engine and gearboxes; in fact, we have practically anything for Douglas 2½hp and a few sundries for 4hp. Below.

—ENFIELD, 3hp, pistons, rings, gudgeon pins, connecting rods, also a vast amount of frame spares for 3, 6 and 8hp carriers, 3hp silencers, rear stands, 3hp frames, 8hp front wheel, tanks, etc., etc. Below.

—B.S.A. 3½ and 4½hp valves, cylinders, pistons, rings, cam wheels, crank pins, bushes, etc. Below.

—ARIEL, all 3½ and 6hp engine spares and gearbox spares. Below.

—TRIUMPH pistons, rings, connecting rods, cam wheels, bushes, crank pins, pulley spindles, gudgeon pins, ball bearings, valves, engine pulleys, valve rockers, tappets and guides, valve caps, filler caps for petrol and oil tank, etc. Below.

—PREMIER pistons, complete 3½hp, 35s.; valves, 6s. 6d.; a large amount of frame spares from 1913 upwards, wheel cones, etc.; a few Sunbeam, Harley, Indian, A.J.B. valves, and other spares. Let us know your requirements; stamp for reply. Below.

—COVENTRY-PREMIER free-engine hub, complete with controls and pulley wheel, brand new, £5 5s.; 3½hp Arno engine, complete with magneto, carburetter, silencer, etc., £10 10s.; frame complete, less back wheel, suit 3½hp engine, with Druid front forks and front wheel, £6; Bowden wire inner and outer, 4d. and 8d. ft.; Lodge plugs, 4s.; Sphinx, 3s. 6d. Below.

—RENOULD'S brand new chain. We have 500 ft. of ½ by ¼ brand new chain, 8s. 3d. per ft.; ¾ by ½, 8s. per ft., postage extra. P. and M. gear rings, new, 22s. Below.

—DOUGLAS tool rolls complete, 22s. 6d. Below.

—1916 6hp TWIN Ariel engine, complete with magneto, exhaust box, induction pipe, ready to drop in frame, £20; several second-hand lamp sets, from 10s. each; several speedometers, all as new, from £2 10s.; several, joss cables, at £2; Ford connecting rods, new and second-hand, crown wheels, pinions, etc., etc. Let us know your requirements. Stamp for reply, please. Below.

—WE have a quantity of back hubs, as fitted to Matchless 1914 and 1915 motorcycles, complete, with chain sprocket, internal band brake, etc., £3 10s.; all brand new, list price £4 15s.; Ariel tank, 1916, less drip feed, £2; pair heavy Druid forks, complete as new, £3; Ariel front mudguard, 10s.; Ariel front stand, 7s. 6d. Below.

—J.A.P., J.A.P., J.A.P. We can supply from immediate stock genuine J.A.P. and brand new 5hp cylinders, 6hp cylinders, 4hp cylinders, 2½hp cylinders, 8hp pistons, 4hp pistons, rings, gudgeon pins, bushes, gear spindles, pulley spindles, connecting rods, timing pinions, cams, rockers, valves, springs, valve caps, valve guides, etc., etc. Below.

—WE have also brand new 4hp J.A.P. twin engines, £18 15s.; brand new 2½hp J.A.P. engines, £15 15s.; 3hp J.A.P. twin engines, £17 10s. All the above are brand new and genuine J.A.P. Below.

—ENFIELD gear spindles for 6 and 8hp machines. Below.

—SIDECAR chassis, complete with springs and wheel, mudguard, etc., £5 15s.; 5-16 ball bearings, 4d. dozen; P. and M. gear rings, 25s. each; Cowey speedometer, £5; Stewart speedometer, £4 10s.; ball races, all sizes in stock; Rudge front mudguard side valance, new, £1; Rudge foot-rest, complete, new, T.T. type, 25s.

—PREMIER crankcase, £2; cyclecar radiator for Ranger cyclecar, perfect, £2 10s.; several 1911 Douglas second-hand parts for disposal, cheap; Premier timing side flywheel, 3½hp, perfect, £1; several Douglas second-hand 2½ crankcases, 35s. pair; 1½hp Minerva crankcase, 15s.; several cane and wicker sidecars from £4; 15-guinea Chemico vulcanizer, as new, £6 10s.; carriage paid. Broadway, Muswell Hill, London. 471-363

SPARE PARTS—WANTED.

—THE Editor of "The Commercial Motor" will be pleased to be advised of any stocks of old type or obsolete commercial-vehicle spare parts, as well as of spares for those touring-car models which are commonly used for conversion to delivery vans, etc. Particulars should state types and principal parts available, and these will be included in the Spare Parts Bureau list published regularly in the editorial columns of "The Commercial Motor." Letters should be marked "Spare Part," and addressed to The Editor, "Commercial Motor," 1 Rosebery Ave., E.C. 4.

NEW & SECOND-HAND MOTOR CYCLES MOTOR CLOTHING ACCESSORIES

Cash—Extended Payments—Exchange—
Send for List, stating requirements.

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2—The small adverts. in "Motor Cycling" are set in clear type, and an announcement is thus easily found.

3—"Motor Cycling" is the only journal the readers of which are all motor-cyclists, or those contemplating the purchase of a motor-bicycle. If you have a second-hand motor-bicycle, you do not want to advertise in a cyclecar paper or a motor paper—therefore, advertise in one which is read by motor-cyclists only, and does not deal with cyclecar topics as well—viz.:

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TANKS.

—TANKS of every description; repairs, re-enamelling. Write for booklet. Green, Water St., Blackfriars, Manchester. 489-836

TUITION.

—MOTOR tuition. The British School of Motor-ing, Ltd., gives the highest standard of training in driving, mechanism and repairs for the lowest fees in England. Call or write for full particulars. The British School of Motoring, 5 Coventry St., Piccadilly Circus, W. P. and M. motorcycle instruction a speciality. zzz-940

—SIDECAR driving. Ladies quickly made proficient for R.F.C., etc. 41 Ashford Rd., Cricklewood. 470-466

TYRES AND TUBES.

—ELITE RUBBER CO. LD. We have the following special clearance lines in motorcycle covers, belts, tubes, etc. These goods are quite new. Any article sent on seven days' approval against remittance. A 3s. outfit sent free of charge to all purchasers of covers and tubes, as advertised, on orders exceeding £1.

—ELITE. Bates No. 1 special heavy. 26 by 2½, 30s., list 58s.; 26 by 2½ oversize for 2½ rims, 35s., list 61s. 6d.

—ELITE. Pedley, extra heavy, 3-ribbed, 26 by 2½ oversize for 2½ rims, 19s. 6d., present list price 55s. Extraordinary offer. Cannot be repeated or offered by any other firm.

—ELITE. Kempshall heavy non-skid, 26 by 2½, 45s., list 72s. 6d. A few only.

—ELITE. Special offer. Diamond rubber-studded extra-heavy covers, best make, fully guaranteed, 26 by 2, 28s. 6d.; 26 by 2½ for 2½ rims, 40s. 6d.; 26 by 2½ for 2½ rims, 40s. 6d.; 650 by 65, 45s. List price almost double.

—ELITE. Extra-heavy rubber-studded covers, 26 by 3, 50s., list 69s. 6d., fully guaranteed; 26 by 2½ Hutchinson T.T., 30s., list 48s., suitable for Indians, etc.

—ELITE. Bates inner tubes, 26 by 2, 6s.; 26 by 2½, 6s. 6d.; 26 by 2½, 7s. 6d.; 26 by 2½, 8s.; 26 by 3, 10s. 6d.; 26 by 3, 9s. Butted 1s. 6d. extra.

—ELITE. Best quality belts, cannot advertise name, 6 ft. lengths by 1 in., 7s. 6d. each; 6 ft. 6 by ¾ in., 6s. 9d. each.

—ELITE. Pedley belts, any length, ¾-in. section, 1s. 7d. per ft.; ½ in., 1s. 8d.; 1½ in., 2s. 6d.

—ELITE. Retreading. Extra heavy, 17s. 6d.; heavy, 15s.; medium, 12s. 6d. Time required, 7 days.

—ELITE RUBBER CO., LD. Head Office, 321-3 High Rd., Streatham, S.W. 16. 'Phone, Streatham 1167. Also at 256 Vauxhall Bridge Rd., Victoria, S.W. 1, 1 minute from Victoria Station. 'Phone, Victoria 6553. Please address all communications to Head Office, Streatham. zzz-178

—TYRES. See Bancroftian advertisement under "Miscellaneous." zzz-8

—12s. 6d. SECURES new 26 by 2½ beaded cover, new tube, 7s. 6d., sent approval, carriage paid, receipt remittance. Palmer's Garage, Tooting. 460-123

—700 by 90 DUNLOP cover, s-h., 10s.; 650 by 65 Palmer tube, new, 7s. 6d.; also offers for 7 ft. 4 in. ¾-in. by ½-in. Renold, new; 1915 B.S.A. valve. C. A., 64 Dync Rd., Brondesbury, N.W. 6. 471-a601

—BASTONE'S, London, for new clearance covers and tubes, as below.

—BASTONE'S. 26 by 2½ Michelin, 9s. 6d.; steel studded, 20s.

—BASTONE'S. 26 by 2½ Michelin Trident, 25s.; Hutchinson Brooklands, 18s.; T.T., 25s.; de luxe, heavy, 30s.

—BASTONE'S. 26 by 2½ de luxe, heavy, 35s.; Gaulois, 18s. 6d.; shell, grooved, 18s. 6d.

—BASTONE'S. Hutchinson tubes, 26 by 2, 5s. 6d.; 26 by 2½, 6s.; 26 by 2½, 6s. 6d.; 26 by 3, 7s. 6d.

—BASTONE'S, 228, Pentonville Rd., King's Cross, London, N.1. Telephone, 2418 North. 471-241

—NEW Moseley 650 by 65 and 26 by 2½ by 7½ combination covers, cost over £4 each, take £2 15s. each, rubber-studded, 18s. each. Saunders, Westbury Lodge, Buckhurst Hill, Essex. 474-266

WINDSCREENS.

—RENNOC MOTOR, SIDECAR and ENGINEERING WORKS certainly lead in price, quality and design of hoods, screens, aprons, etc. 11 Victoria Rd., Stroud Green, N. 472-816

—WINDSCREENS. The Standard, 27s. 6d.; folding top, 32s. 6d.; double side windscreen, 45s.; the Fitall, 28s. 6d.; the fixed, 24s.; the Orto, 33s., 55s., 60s., and 65s.; Blumel's, 42s.; the Walbro, 30s.; lawn waterproof hoods with strong wood frames and plated fittings, 42s., 48s. and 60s. M.C. Dept., Juno Showrooms, 248 Bishopsgate, London. 473-a689

—ORTO windcreens. The high-water mark of design, ingenuity, quality and workmanship; Ortomat in action. Atkinson's, 306 Oxford Rd., W. 474-239

PEACE

OUR congratulations to our gallant soldiers, particularly those old friends who have so successfully carried on the pastime in the sterner realities of war, dispatch riding, etc.

May they obtain that well-earned freedom of the open road, which will again shortly be the lot of the motorcyclist, when the already expiring D.O.R.A. breathes her last.

Next week we will tell you of some real bargains we shall have to offer.

LAMB'S

151, HIGH STREET, WALTHAMSTOW, E.17.

'Phone—Walthamstow 169.

50, HIGH ROAD, WOOD GREEN, N.22.

'Phone—Hornsey 1956. (Only depot in this district). Hours 9 to 8. Thursdays 1 p.m.

WANTED.

—SEND your motorcycle to Palmer's Garage, Tooting, Wimbledon Station; cash offer will be telegraphed immediately on receipt of machine. Machine can be included in fortnightly auction without charge if offer not accepted. Reserve price may be fixed. Sole address. Palmer's Garage and Auction Rooms, 153-159 High St., Tooting. zzz-715

—WANTED, good up-to-date second-hand accessories, state particulars and prices. Service Co., 252 High Holborn, London, W.C.1. zzz-376

—WE are buyers of motorcycles of the following makes not earlier than 1914: A.B.C., A.J.S., Brough, Enfield, Harley-Davidson, Henderson, Indian, Norton, Sunbeam, Triumph, Zenith, and other good makes. Write, giving particulars and prices, Service Co., 252 High Holborn, W.C.1. zzz-375

—SEND your motorcycle or combination to Wandsworth Motor Exchange, Wandsworth (Nine Elms Station). Cash offer will be telegraphed immediately on receipt of machine; machine can be included in our sales; no charge if offer not accepted; many machines sold weekly. Wandsworth Motor Exchange, Ebnor St., Wandsworth (Town Station). 'Phone, Battersea 327. 484-197

—BOSCH Z.A.V. 60-degree magneto. The Runbaken Magneto Co., Ltd., Cheetwood Lane, Derby St., Manchester. zzz-92

—MOTORCYCLES wanted for cash, good solo or sidecar machine. Eastern Garage Co., 418 Roulford Rd., Forest Gate, E. 7. zzz-191

—FOR spot cash. Combinations from 3½-8hp, in sound condition, best cash prices paid. Please give full particulars. Maudes', 100 Great Portland St., London, W.1. 471-231

—RIDER TROWARD and CO., 31, 40b and 78 High St., Hampstead, are open to accept high-class machines for sale on commission, no sale, no charge, 5 per cent. on proceeds; free collection, garage, cleaning, advertising and insurance. Write before sending. Quick sales effected. 471-216

—THE H.C. MOTOR CO. can take a few good motorcycles and combinations for sale on commission; 5 per cent. only charged when sold. No other charges. Write for full particulars. The H.C. Motor Co., 347 Finchley Rd., N.W. 3. 'Phone, Hampstead 4531. 471-247

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—THE H.C. MOTOR CO. require good combinations and solo machines for cash. Send or bring your machine to us. Cash offer made on sight. H.C. Motor Co., 347 Finchley Rd., N.W. 3. 471-248

—HARLEY-DAVIDSONS wanted for cash. Henry Nottbeck, 37 Turnham Green. 471-253

—WANTED, latest 4-cylinder F.N., with clutch and speeds. Box No. 4477, c/o "Motor Cycling." 471-2631

—WANTED, A.J.S., Matchless or similar combination at once. 51 Maplethorpe Rd., Thornton Heath, S.E. 471-2632

—WANTED, flywheel for 2¼ F.N., minus clutch gear. Tracey, Osborne St., Colchester. 471-2637

—WANTED, a lady's motorcycle, at once, or 2¼ lightweight. Mrs. Crossley, Hollinwood, Shop-hard's Lane, Dartford. 471-2641

—PRIVATE buyer requires combination, Enfield, B.S.A., James, perfect order, Lucas dynamo lighting preferred, not earlier than 1916, Sheffield district, trial. Box No. 4478, c/o "Motor Cycling." 471-2643

—WANTED, good motorcycle for cash. O. S., 497 Old Ford Rd., Bow, E. 3. 471-2649

—WANTED, Sturmer-Archer 3-speed countershaft, gearbox, chain-cum-belt, new or good second-hand. Price and particulars to Pridemore's Garage, Barnetaple. 471-2652

—WANTED for Douglas, 1912-13, rear cylinder, chain guard, chain, belt, lamps, oil and petrol tubes, Binks 3-jet carburetter, XI-All saddle, links, fork springs; approval deposit. Houghton, London Rd., St. Albans. 471-2657

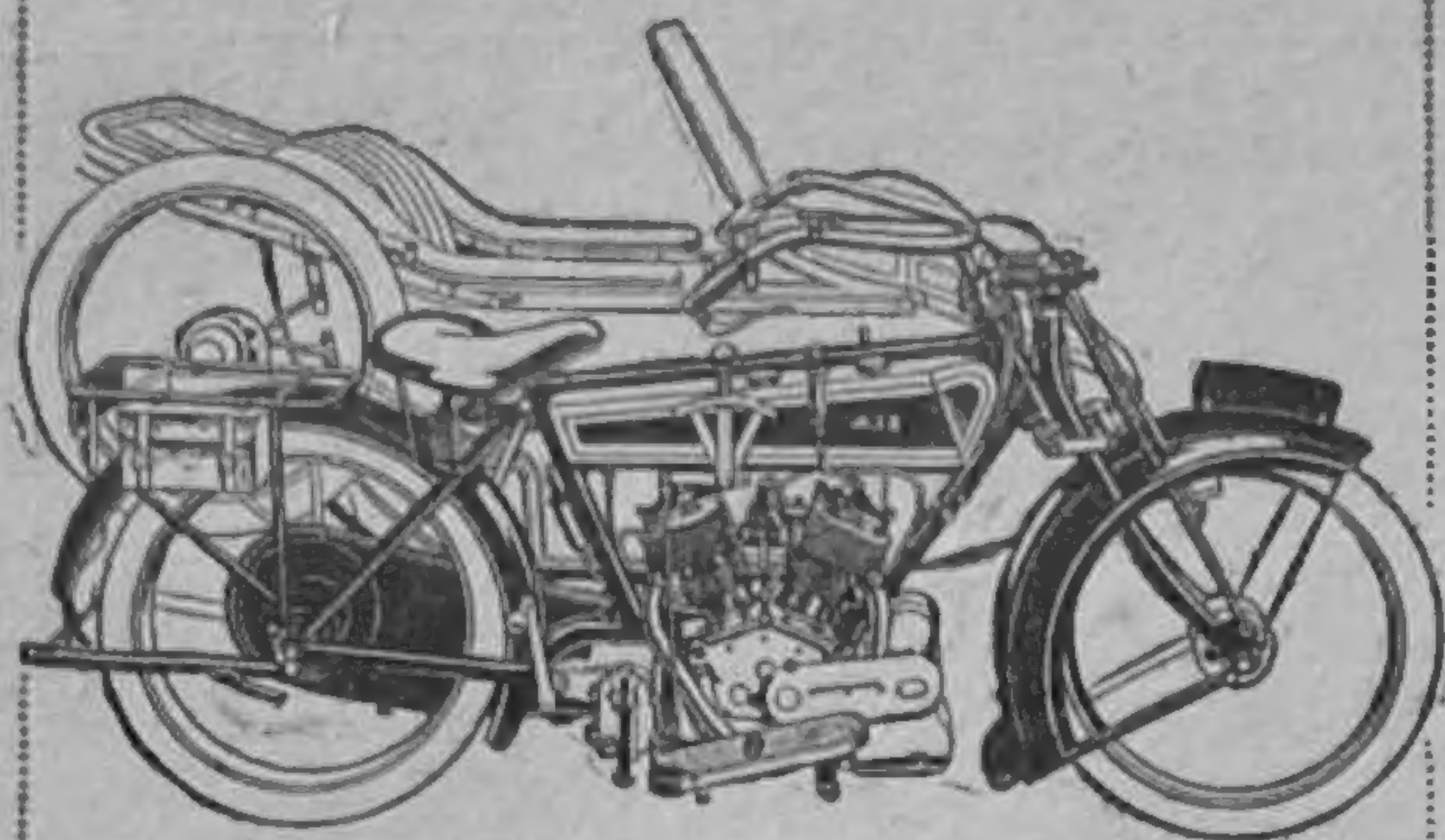
—WANTED, 5hp countershaft combination, 1915 or later; no dealers. Houghton, London Rd., St. Albans. 471-2658

—WANTED, motorcycles, combinations, light cars, etc. Please write, giving full details, prices, to Speechley, 1 Gunnersbury Lane, Acton, London, W. 3. 471-2662

—WANTED, small spur wheel or complete driving end for Coway speedometer, 28-in. wheel. Box No. 4481, c/o "Motor Cycling." 471-2659

—MOTORCYCLE combination or motorcycle, suitable for sidecar, reliable and moderate; no dealer. Write, Box No. 898, Willing's, 125 Strand, W.C. 2. 471-2663

—WANTED, late model 6hp combination, good price given for suitable outfit. Particulars, price and when seen, 430 Whitehorse Rd., Thornton Heath. 471-2665



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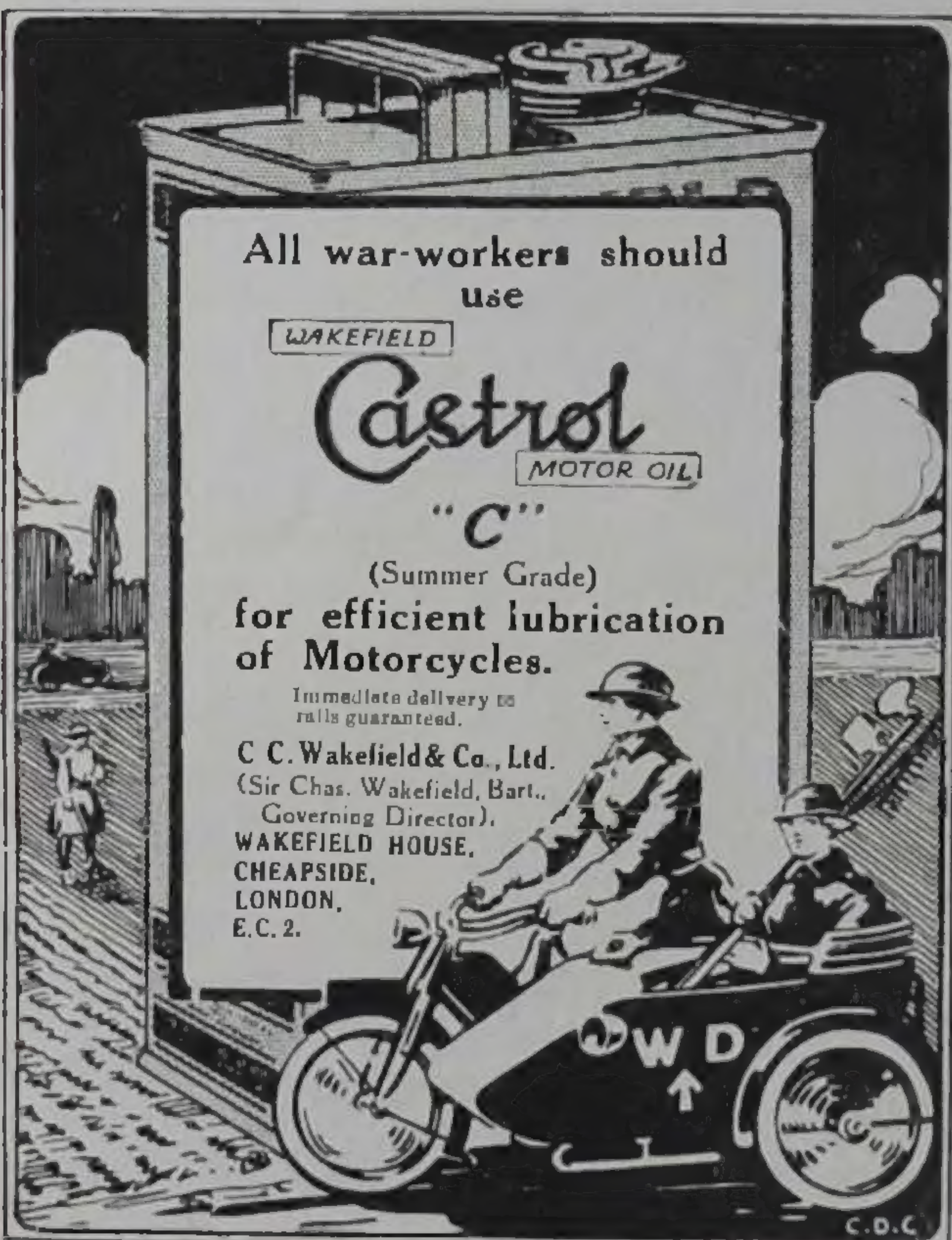
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